RACO

No 51

RAILROAD ACCESSORIES CORP.

NEW YORK, N. Y.

RACO PRODUCTS
R
A
ENGINEERED FOR LONG LIFE

RAILWAY SIGNAL MATERIALS

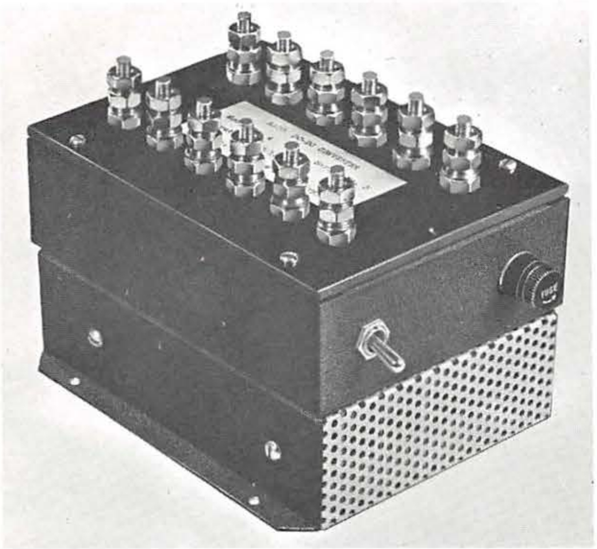
Catalogue No. 51

RES. 419 PARK BOULEVARD
GLEN ELLYN, ILLINOIS

HOPKINS 9-5655

RAILROAD ACCESSORIES CORPORATION
C. L. STEINMETZ, SALES ENGINEER

405 LEXINGTON AVE.
NEW YORK 17, N. Y.



DC-DC Converters

ORDERING REFERENCES:

10/2.5-2 RACO DC-DC Converter (Two isolated outputs)
10/2.5-5 RACO DC-DC Converter (Five isolated outputs)

SPECIFICATIONS:

INPUT — Volts: — 10-13 DC nominal
Amperes: — Dependent on output current viz.:
No load input — 300 MA
Full input — 2 outputs 1.8 A
5 outputs 4.5 A

OUTPUT — Voltage: — each isolated output — 2.5 DC V nominal at 1.0 A
Amperes: — each isolated output — 3.0 A maximum continuous

ENVIONMENT — −40°F to +150°F

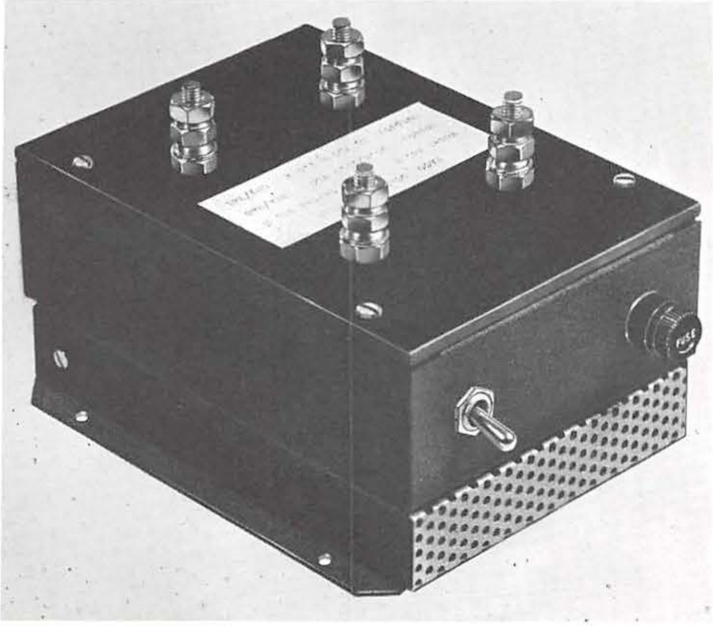
MOUNTING — Wall, rack, or shelf

REFERENCE	SIZE	WEIGHT
10/2.5-2	5¾" x 8¼" x 4¼"	3¼ pounds
10/2.5-5	5¾" x 8¼" x 5¼"	5½ pounds

Railroad Accessories Corporation

Five Tenakill Park, Cresskill, New Jersey

DC-DC Converters



ORDERING REFERENCE:

10/28-1 RACO DC-DC Converter

SPECIFICATIONS:

INPUT — Volts: — 10-13 DC nominal

Amperes: — No load 350 MA
Full load 2.8 A

OUTPUT — Volts: — 28 DC nominal

Amperes: — Full load 1 A

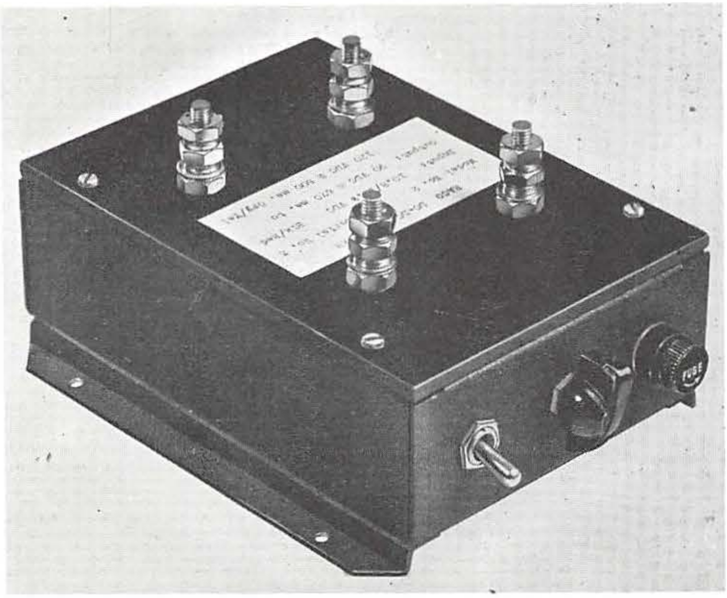
Ripple: — 0.5% at maximum full load

Regulation: — ±5% of nominal from 10% to 100% of full load

ENVIRONMENT — −40°F to +150°F

MOUNTING — Rack, wall, or shelf

WEIGHT — 3¼ pounds



DC-DC Converters

ORDERING REFERENCE:

10/120-1 RACO DC-DC Converter

SPECIFICATIONS:

INPUT — Volts: — 10-13 DC nominal
Amperes: — with 120 V DC secondary output
No load — 550 MA
Full load — 5.9 A

OUTPUT — Volts: — Tapped: 90, 100, 110, or 120 DC nominal
Amperes: — 670 to 500 MA
Watts: — 60
Ripple: — 0.5% at maximum full load
Regulation: — ±5% of nominal rated voltage from 10% to 100% of full load

ENVIRONMENT — −40°F to + 150°F

MOUNTING — Rack, wall, or shelf

OVERALL DIMENSIONS — $5\frac{3}{4}''$ x $8\frac{1}{4}''$ x $3\frac{1}{2}''$

WEIGHT — $3\frac{1}{2}$ pounds

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Five Tenakill Park, Cresskill, New Jersey

DC-DC Converters

ORDERING REFERENCE:

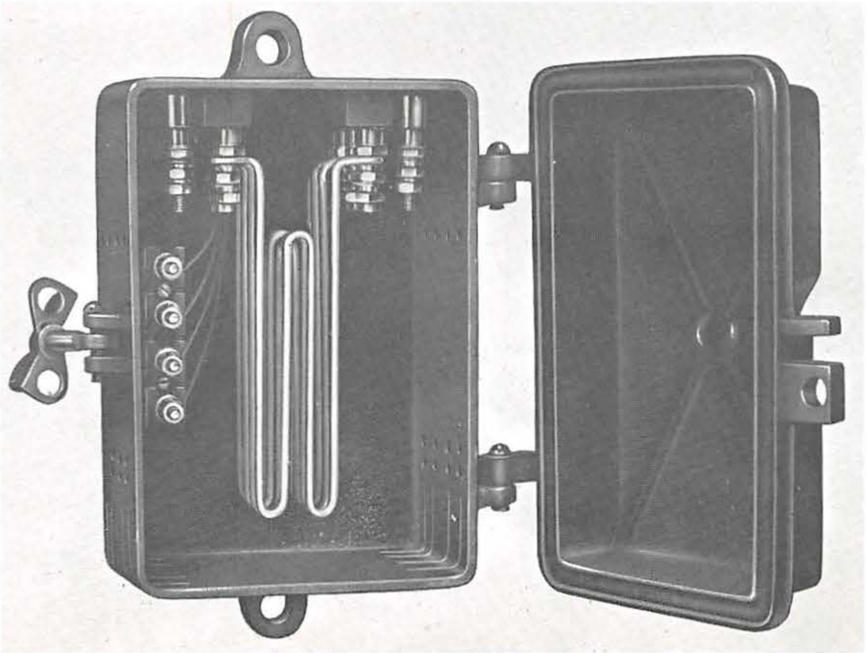
10/250-1 RACO DC-DC Converter*

SPECIFICATIONS:

INPUT — Volts: — 10-13 DC nominal
Amperes: — No load 300 MA
Full load 2.9 amp.
OUTPUT — Volts: — 250 DC nominal
Amperes: — 120 MA full load
Watts: — 30
Ripple: — Max. 0.5% at full load
Regulation: — ±5% of nominal rated voltage from 10% to 100% of full load
ENVIRONMENT — Operating temperature range from −40°F to +150°F
MOUNTING — Rack, wall, or shelf
OVERALL DIMENSIONS — 5¾" x 8¼" x 3½"
WEIGHT — 2½ pounds

**See preceding page for photograph of this model converter.*

High Water Detector



ORDERING REFERENCE:

No. 514-1 RACO High Water Detector

The **RACO High Water Detector** is designed on the resistance bridge principle and, therefore, has no moving parts to become defective through rust and corrosive action resulting from intermittent exposure to flood waters. The detection unit, composed of a copper clad, steel grid and sealed resistors is housed in a cast iron box with hinged cover and lock hasp. Box is slotted and drilled for appropriate entry of high water and for drainage of same on recession of the flood water.

Water rising to short circuit the resistance grid will cause external standard signal relay to drop away, opening signal control circuits. Circuitry usually provides for push button reset of detector repeating relay. Housing also includes terminals for line connections to energy source and repeating relay and appropriate cable outlet.

Housing may be lagged or bolted to wall or post.

OVERALL DIMENSIONS: 12⅝″ x 8⅜″ x 6½″

SHIPPING WEIGHT: 32 pounds

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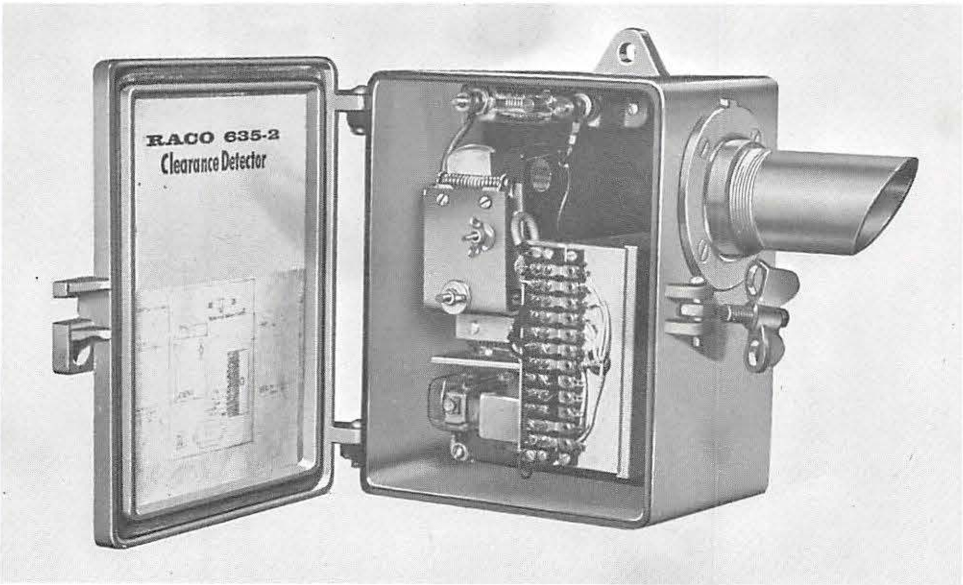
Clearance Detector



ORDERING REFERENCE:

No. 635-2 RACO Clearance Detector

A reflex system of optics (split beam principle) operating from 115V 60 cps and consuming about 100W responds to any 1″ diameter vertical obstruction at speeds up to 60 mph.

The unit is independent of wind sway, because all of the electrical equipment is mounted on one side of the beam, and only a retrodirective reflector is needed on the opposite side.

The reflector may be placed up to 75′ away in clear weather. Where the reflector is backed by brightness (such as sky), it must be mounted on a 2′ x 2′ panel to obscure that part of the brightness which is directly in line with the reflector.

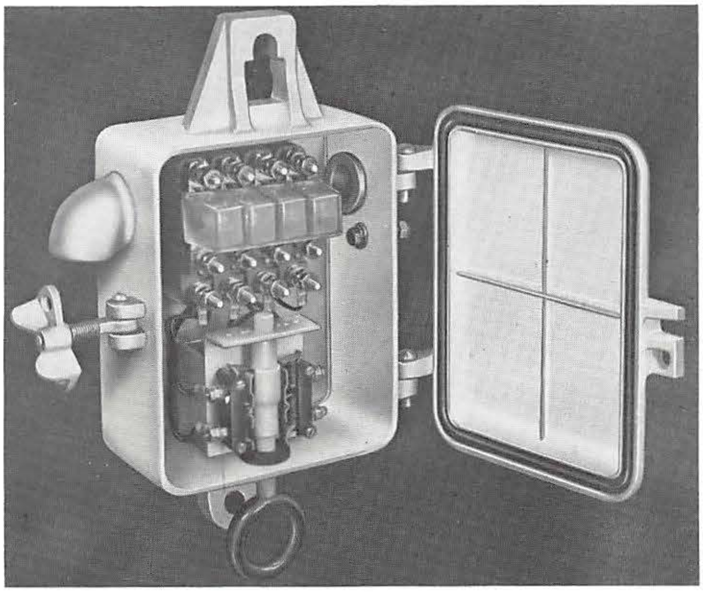
The unit can be arranged for manual testing by remote pushbutton; for manual resetting, also remotely.

Non-operation due to smoke, fog, lamp burnout, etc. provides an alarm which cannot be reset; hence, indicates "out-of-service".

The unit can be tied into the track relay for occupancy: or a **RACO Magnetic Detector and Timing Unit** can be used to trigger it.

SHIPPING WEIGHT: 41 pounds approximately

Line Sectionalizing Switch



ORDERING REFERENCE
#425-18 Line Sectionalizing Switch

The **RACO Line Sectionalizing Switch** is designed to provide a means of opening TCS lines for test purposes. It comprises a double pole, single throw switch arrangement actuated by means of a cammed nylon rod which may be operated by hand or extension pole, such as a switch rod. The switch and RACO Clearview Arresters are housed in cast aluminum box designed for pole mounting.

Switch is normally closed with operating ring in the DOWN position. To open contacts for line test, operating ring is pushed upward by hand, or suitable extension rod.

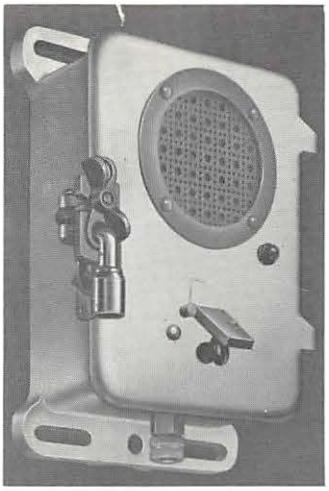
Design is such that contacts cannot drift to open position due to vibrations. Contact surfaces are silver to silver with high degree of wiping action and tension.

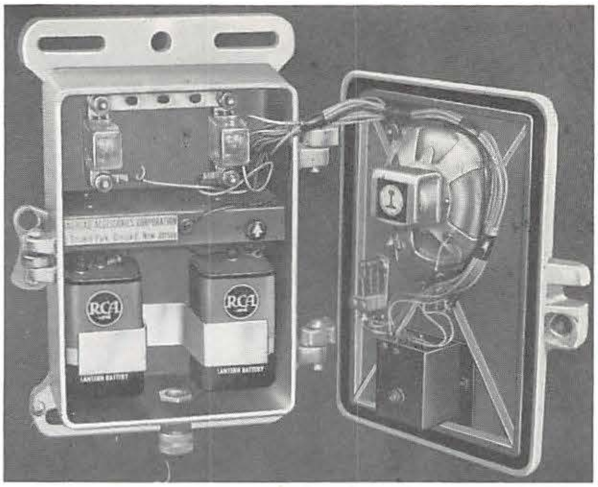
Ground connection is provided from Arresters to ground stud on housing, so that ground wire connection can be made on stud outside of housing.

Ordering Reference — RACO #425-18 Line Sectionalizing Switch

OVERALL DIMENSIONS — 17″ x 11″ x 6″

SHIPPING WEIGHT — 12 pounds





RACO Wayside Speakerphone

The **RACO Wayside Speakerphone** is designed to replace the wayside phone booth or phone box. All components—weatherproof speaker, printed amplification circuit board, and dry battery are housed in cast iron or aluminum box, as desired. Housing is equipped with hinged door and lock hasp.

Speakerphone is normally disconnected from line; insertion and clockwise turn of switch key connects Speakerphone to line and turns on amplifier. Weatherproof 'push-to-talk' button is furnished; or if desired 'push-to-talk' button can be eliminated and function replaced by additional clockwise turn of switch key.

ORDERING REFERENCE: #645-10 Wayside Speakerphone

SPECIFICATIONS:

RECEIVING:

Sensitivity: −25 to −30 db
Impedance: 3000 ohms (300 cps to 5 kc), increasing above 5 kc to 15000 ohms at 30 kc.
Resonant Frequency: 100 cps. Impedance at this frequency is 750 ohms and rises rapidly to 3000 ohms either side of 100 cps.
Audio Power: 200 MW

TRANSMITTING:

Max. output: +10 db.
Impedance: 600 ohms (300 cps to 3000 cps) increasing to 15000 ohms above 3000 cps.
Frequency Range: 300 cps to 3000 cps.
Batteries: Two 6.0V general purpose lantern batteries
Battery Life: Estimated 5 years
Transistors: Three 2N408 and One 2N35

Printed circuits with all components except speaker, vol. control, and push switch.

ENVIRONMENT — For outdoor, all-weather operation.

MOUNTING — For post, pole, or wall.

Weight approx. 40 lbs. in cast iron housing

Weight approx. 26 lbs. in cast aluminum housing

TO:—RAILROAD SIGNAL & COMMUNICATION ENGINEERS
FROM:—RAILROAD ACCESSORIES CORPORATION,
CRESSKILL, NEW JERSEY

We believe that much can be done to reduce the installation cost and subsequent maintenance expense of signal and communications systems by minimizing energy sources and by maintaining automatically the minimum energy sources at design capacities.

In pursuit of this goal, **RAILROAD ACCESSORIES CORPORATION** has designed, developed, tested, and now offers to the industry a line of DC-DC Converters and a fully automatic temperature compensated Battery Charger. All of these devices utilize solid state components of top quality and precision for long life and reliability of performance.

The **DC-DC Converter** of appropriately selected output will permit the use of the line battery as energy source for one or more track circuits, or as energy source for code lines or other purposes of specific voltage and current requirements. Use of the Converter will save the expense incident to the battery, charging unit, housing, wiring, and "former maintenance" of those units replaced by the RACO DC-DC Converter.

The **RACO Automatic Temperature Compensated Battery Charger** has been developed to reduce the weekly (or bi-weekly) battery checking, charge adjusting, and the too, too frequent electrolyte addition which is required by manually adjusted charging rates. What is equally, if not more, important is the fact that with the ATC Battery Charger the capacity you bought and paid for in your battery is always there—because the battery is always charged to that capacity. Since the battery is never subjected to overcharging, the useful life of the battery is greatly extended.

Attached are data sheets covering references and specifications for the units now available. We would be pleased to have your inquiry with respect to these items.

Also attached are data sheets covering the following products—**NEW FROM RACO**—

#645-5 Wayside Speaker Phone (fully transistorized)
#635-2 Clearance Detector (utilizing split beam principle)
#514-1 Hi-Water Detector (no moving parts)
#425-18 Line Sectionalizing Switch

Railroad Accessories Corporation continues its efforts to be of service to the railroad industry and to the Signal and Communications departments of that industry.

Cresskill, New Jersey
October, 1962

RACO PRODUCTS
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RACO
Automatic T-C
Battery Charger

ORDERING REFERENCE:

RACO Model 12 Automatic Temperature Compensated (ATC) Battery Charger

SPECIFICATIONS:

Charging Characteristics

Capacity—12 DC amperes for 6 lead cells, or 8 or 9 nickel iron cells.

13 DC amperes for 5 lead cells, or 7 nickel iron cells.
Continuous duty at 150°F.

Voltage Regulation—Change in battery voltage from no load to full load is less than 0.1 volt.

Input Power Requirements

Designed for operation from 115V AC, 6 cycle service.

Voltage—Primary taps permit line matching to voltages from 85 to 140V AC. Operation is not affected by variations of ±20% from tap voltage setting.

Railroad Accessories Corporation
Five Tenakill Park, Cresskill, New Jersey

Frequency—60 cps.

Efficiency—Approximately 70% at full load and 115V RMS.

Input Current—Approximately 3.0 A RMS at full load and 115V RMS.

Environment—Unit housed in metal case designed for wall, rack, or shelf mounting and for operation at full load in ambient temperatures from −30°F to +150°F. Housing and mounting must permit unimpeded air circulation.

Temperature Compensation—The voltage which must be applied to any storage cell to cause the cell to take the proper amount of current required to compensate for load and internal losses is a function of the temperature of the battery. The voltage applied to cells being charged by the RACO ATC Charger is continuously adjusted to the temperature by a temperature sensor attached to the side of a pilot cell. This automatic temperature compensation is effective over the entire temperature range of operation recommended by the cell manufacturer.

Protective Features

Fused AC power input.

Fused DC power output which protects in event of polarity reversal during installation or maintenance.

Semi conductors fused against unusual power line surges.

Electronic circuit limits maximum continuous output to safe value.

RACO ATC Charger automatically cuts off in event of open temperature sensor circuit, or short circuit on battery, or an unreasonable voltage exhibited by battery for any reason. This protective feature is known as Electronic Fault Protection.

Controls & Instrumentation

On/Off AC switch and pilot light.

Float/Equalize Switch.

Panel Ammeter 0-15 A DC

Input and Output termination.

Direct battery voltage test plugs.

Dimensions

Overall 17″ x 11½″ x 8½″.

Shipping Weight

67 pounds approximately.

August 3, 1962

RELAY OPERATOR FOR THE RACO MAGNETIC DETECTOR

DESCRIPTION:

The Relay Operator is a completely transistorized device designed to match the RACO Magnetic Detector to a standard signal line relay.

The Magnetic Detector has a normally closed contact which opens in the presence of a wheel flange. The signal line relay used with the Relay Operator is normally de-energized and is energized in the presence of a wheel flange.

NECESSITY:

The Relay Operator performs three useful functions as follows:

1. The length of time that the Magnetic Detector contacts remain open during passage of a wheel at 5 m.p.h. is estimated at 125 milliseconds. The pickup time of a standard four point relay is of the order of 200 milliseconds. The Relay Operator will accept a one millisecond contact operation on the Magnetic Detector and provide a 750 millisecond or longer pulse to the signal relay. This will assure pickup of the signal relay on the first wheel of a train regardless of track speed.
2. The signal relay repeating the Magnetic Detector is normally open, rather than normally closed like the Magnetic Detector contact itself.
3. The current drawn through the contacts of the Magnetic Detector is 3.5 milliamperes non-inductive. This small non-inductive current assures the longest possible life for the Magnetic Detector contacts.

PRELIMINARY SPECIFICATIONS:

Nominal Battery Voltage - 10 - 12 V DC
Minimum Battery Voltage - 8.0 V DC
Maximum Battery Voltage - 14.0 V DC
Minimum Ambient Temperature - -85°F
Maximum Ambient Temperature - plus 160° F
Minimum Time Input Pulse - ≤ 1 m.sec.
Minimum Time Output Pulse - >750 m. sec.
Signal Relay Res. Minimum - 100 ohms
Signal Relay Minimum Pickup - Minimum Battery Volts Less 2.0
Signal Relay Maximum Drop Away - 2.5 V DC
Nominal Current Drain Relay De-energized - 10 ma
Nominal Current Drain Relay Energized - 35 ma

C.A.B. ✓
A.B.H. ✓
D.H.W. ✓
D.T.A. ✓
C.L.W. ✓
T.H.S.
D.P.S. -

FILE Raco Catalog

J. R. Taylor

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CATALOGUE No. 51

We have taken great care in the preparation of this catalogue to condense and simplify it, as a matter of convenience to our customers. To accomplish this, illustrations are smaller, but quite clear. All essential data is given and it is clearly tabulated.

Many devices, each used by one or two railroads, such as Terminal Boxes, Pole Boxes, etc., are omitted, since they are simply modifications of designs shown herein. In this respect, if you require changes in our designs to meet your need, will you kindly consult our Sales Engineers, or submit your suggestions directly to us.

We can furnish you any devices which do not appear in this catalogue, which you may recently have purchased from us.

RAILROAD ACCESSORIES CORPORATION

MAIN OFFICE
405 LEXINGTON AVENUE, NEW YORK 17, N. Y.
(Chrysler Bldg.)

Factories:
Albany, N. Y.
Woodside, L. I., N. Y.

Printed in U.S.A. — 1951

FOREWORD

This signal catalogue is made up of eight sections, A, B, C, D, E, F, G and H. Generally each section covers a particular group of products.

Three indexes are given:

First: A **sectional index,** giving a list of the devices under each section and their catalogue page numbers.

Second: An **alphabetical index** of all devices.

Third: A **numerical index.** This index gives the ordering reference numbers of the devices and the page numbers on which these may be found.

This catalogue contains only our signal products. Our Maintenance of Way machines, such as the Raco Power Track Wrench, Raco Tie Borer, etc., are covered in separate catalogues.

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SECTION A

Bonding

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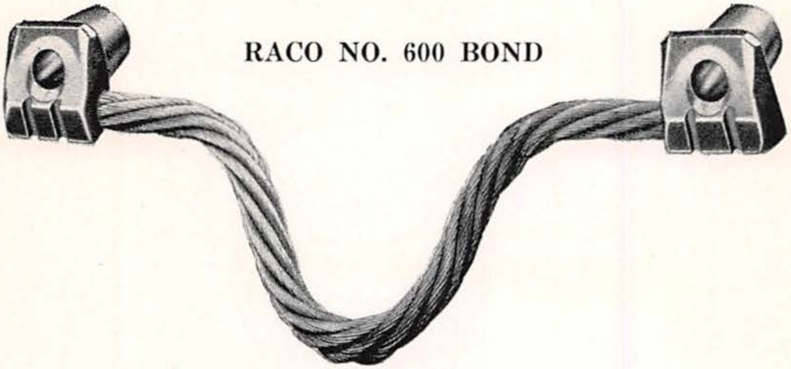
RACO BONDS

RACO NO. 600 BOND



Simplicity of design — only two parts — the terminal and the strand. This simplicity minimizes the possibility of error in production and installation and makes for a more fool-proof product — a very vital consideration.

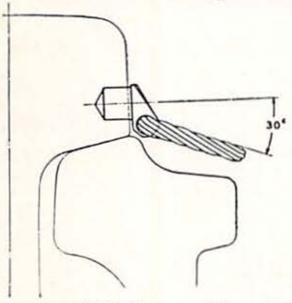
Solid terminals of cold forged copper and our time-proven bronze strand — very low resistance and completely non-rusting.

The terminals are attached to the strand in such a way that when stretched beyond its limit, the strand will break and definitely indicate.

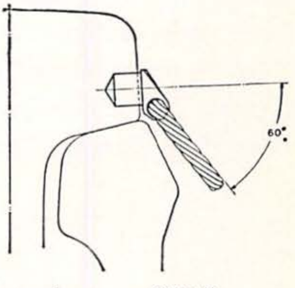
Strong terminals aid in extracting and re-driving.

Fully as tight after extraction and re-driving.

Meets AAR requirements in all respects.



600-1



600-2

Ordering References

No. 600-1 — Raco Bond 30° angle.
No. 600-2 — Raco Bond 60° angle.

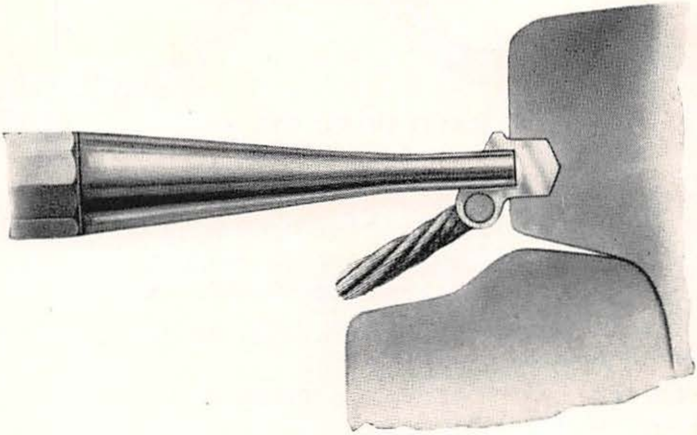
Bonds other than standard length (4″) can be furnished in steps of 1″.

Approximate weight per carton of 200 (one punch and one hole gauge included) is 26 pounds.

Long bonds, which may be used to put behind angle bars, and be fastened in blind holes in the web of rail by the No. 600 type terminal, can be furnished.

RACO BONDS

RACO NO. 600 BOND



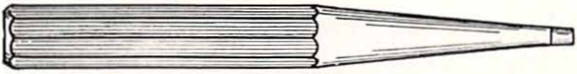
Designed to reduce to a minimum the danger of being hit by dragging equipment.

The bond cannot be driven off center.

The expansion takes place inside the hole.

Wide-head-joint bars or head-free rail cannot interfere with driving.

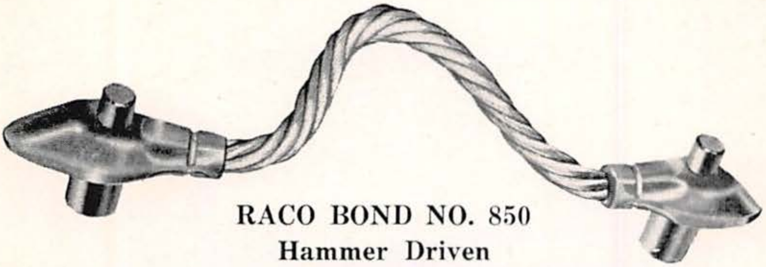
Hammer blows delivered on the punch, cannot injure the bond, damage or loosen the strands.



No. 600-7 Raco Bond Punch

One driving punch and one hole gauge are included in each carton of 200 Raco Bonds.

RACO BONDS



RACO BOND NO. 850

Hammer Driven

A very well designed soft steel hammer-driven bond with copper contact using our time-proven bronze strand.

The steel terminal is drilled completely through, producing a tube which is easily expanded throughout its entire length.

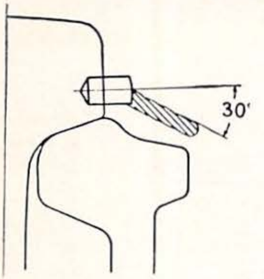
Two pins are inserted in the tube — first the copper pin and then a steel driving pin.

The pins are locked in place by means of serrations to prevent their loosening in shipment.

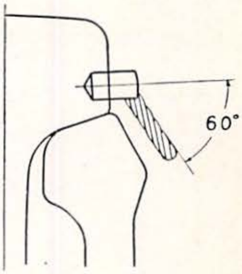
The terminals are attached to the strand in such a way that when stretched beyond its limit, the strand will break and definitely indicate.

The hammer blows force the copper under great compression into tight contact with the rail. At the same time, the copper flows in the only direction it can — sideways, expanding the tube to the very end.

Meets AAR requirements in all respects.



850-1



850-2

Ordering References

No. 850-1	Raco Bond 30° angle.
No. 850-2	Raco Bond 60° angle.

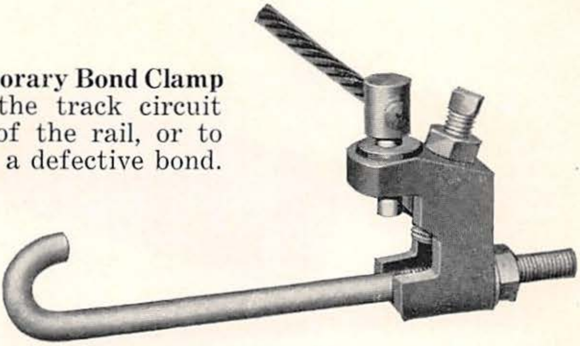
Other than standard length (4″) can be furnished in steps of 1″.

Approximate weight per carton of 200 is 26 pounds (one hole gauge included).

Long bonds, which may be used to put behind angle bars, and be fastened in blind holes in the web of rail by the No. 850 type terminal, can be furnished.

RACO BONDS

The No. 388 **Raco Temporary Bond Clamp** is used to maintain the track circuit while Bonds are out of the rail, or to span a joint in case of a defective bond.



Made with hot tinned malleable castings, galvanized steel hook-bolts, nuts and washers and chrome steel cupped set-screws.

The set-screws bind against the edge of the rail base, insuring electrical contact.

A hole, 3/8″ in diameter, is provided to take plug type stranded bonds. When driving bond, support edge of clamp to prevent deforming.

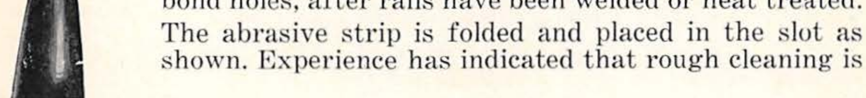
Ordering Reference

No. 388-1 Pair of Raco Temporary Bond Clamps.

Bonds for these clamps are not furnished unless specified.

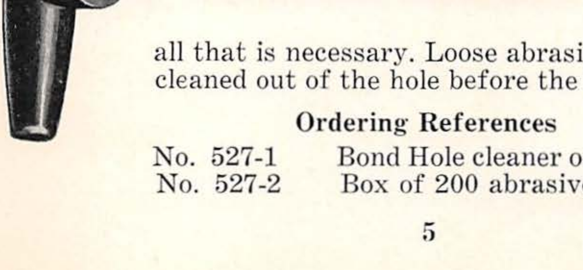
Approximate weight of clamps only — 3 lbs. per pair.

No. 388-2 same as above, except equipped with AAR binding post for jumper connection.



No. 341 Raco Bond Extractor

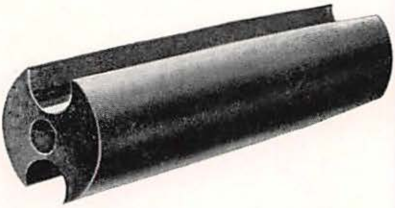
The No. 527 **Raco Bond Hole Cleaner** provides a simple and satisfactory means for removing oxidation from rail head bond holes, after rails have been welded or heat treated. The abrasive strip is folded and placed in the slot as shown. Experience has indicated that rough cleaning is all that is necessary. Loose abrasive material should be cleaned out of the hole before the bond is installed.



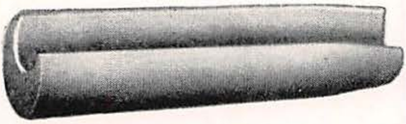
Ordering References

No. 527-1	Bond Hole cleaner only.
No. 527-2	Box of 200 abrasive strips.

RACO CHANNEL PINS



Raco Duplex Channel Pin (3/8″ Holes)



Raco Single Channel Pin (9/32″ Holes)

Made of soft steel in accordance with AAR specifications. Tinned or coppered as specified.

Approximate weights:

Duplex Channel Pins, 30 lbs. per 1000.
Single Channel Pins, 18 lbs. per 1000.

RACO POWER BONDING DRILL

An excellently designed light but rugged power drill made especially for maintenance work. Easily adjusted to drill either head or web rail.

The weight is balanced on ball bearing rollers, as the drill is moved from joint to joint.

A simple stout clamp (as successfully used on Raco Hand Bonding Drills) fastens the machine securely to the rail for drilling, and affords an instant release for quick removal.

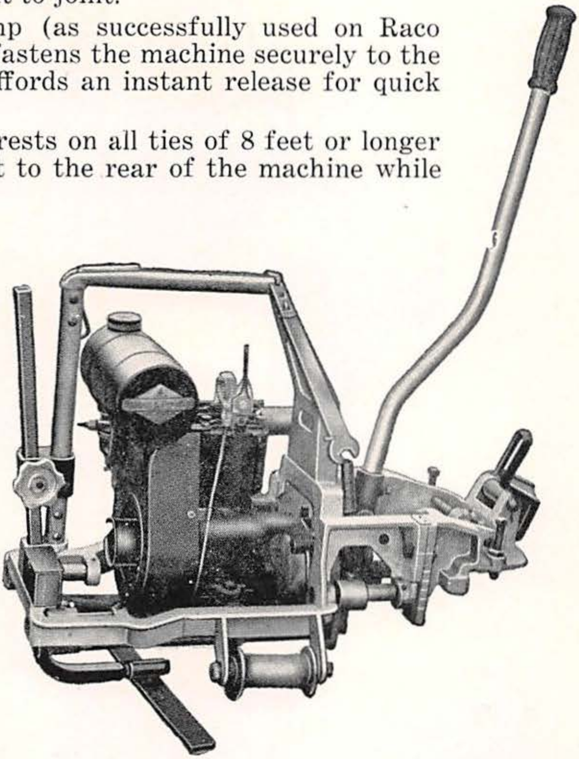
The adjustable foot rests on all ties of 8 feet or longer and gives solid support to the rear of the machine while drilling.

Standard 3/8″ or 9/32″ Bonding Bits are easy to install and remove from the collets, which automatically centers them in the collet chuck.

The chuck is directly driven by a B&S air cooled gas engine (1.6 H.P.) equipped with a self-contained gear reduction and a retrievable starter.

A hand throttle adjusts the speed of the bit.

The permanently sealed ball thrust bearing on the engine shaft needs no lubrication.



No. 575-1

A gauge placed in full view of the operator and near the bit makes proper spacing of holes a simple matter.

One special wrench fits all adjusting nuts on the machine.

Proper drilling angle is insured by a built-in protected level.

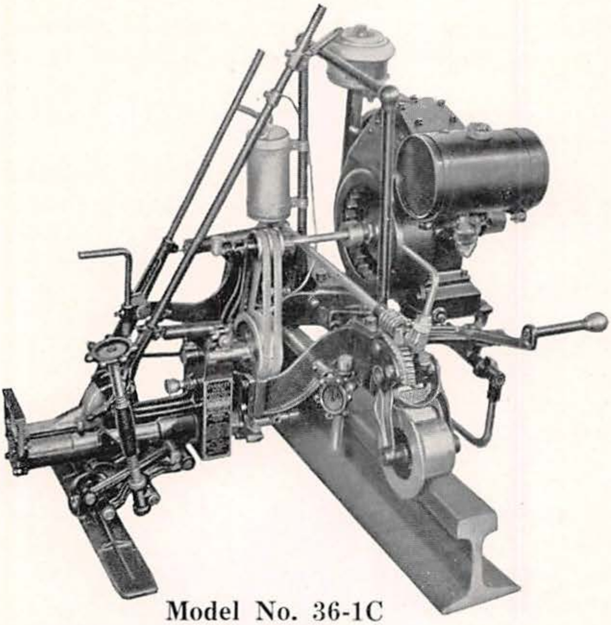
Ordering Reference

No. 575-1 — Raco Power Bonding Drill

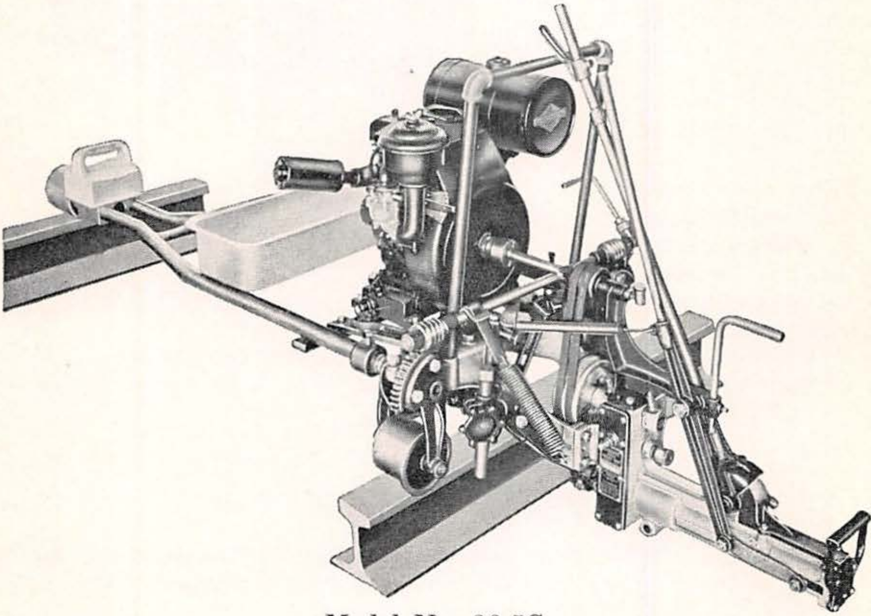
Approximate net weight of bonding drill is 80 lbs.

Note: Drill will be furnished with one No. 574-14 collet for 3/8″ bit unless the No. 575-64 collet for 9/32″ bit is specified. Extra collets may be ordered using these references.

EVERETT POWER BONDING DRILLS



Model No. 36-1C



Model No. 36-5C

EVERETT POWER BONDING DRILLS

The Everett Power Bonding Drill Model 36-1C utilizes the collet chuck, and drills either the head or the web of the rail.

The Model 36-2C is similar to the 36-1C, except that it drills the web of the rail only.

The Model 36-5C is also similar to the 36-1C, except with the addition of the outboard roller and the elimination of the adjusting foot. This results in maximum drilling speed and more accurate vertical bond hole locations with relation to the top of the rail.

Ordering References

No. 36-1C Everett Power Bonding Drill. Drills both the head and web of the rail.

No. 36-2C Everett Power Bonding Drill. Drills the web of the rail only.

No. 36-5C Everett Power Bonding Drill. Drills both the head and web of the rail.

Everett Bonding Drills are furnished with an oiler unless otherwise specified.

Weights

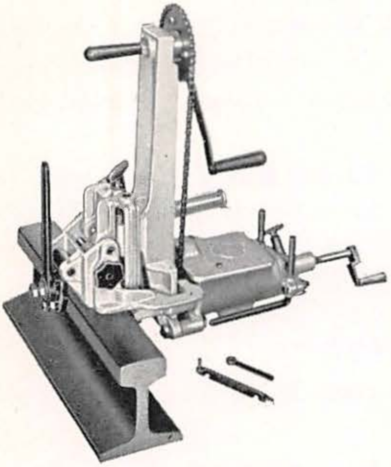
Drill 36-1C and 36-2C — approximate net weight 250 lbs.
crated shipping weight 305 lbs.

Drill 36-5C — approximate net weight 280 lbs.
crated shipping weight 335 lbs.

Note: Bonding drill will be furnished with one No. 575-14 collet for 3/8″ bit unless the No. 575-64 collet for 9/32″ bit is specified. Extra collets may be ordered using these references.

In order to convert your present bonding drill, submit the serial number of the machine and specify the type of machine you wish to convert to.

RACO HAND BONDING DRILL



No. 345A

The Raco Hand Bonding Drill is designed for drilling either head or web of rail and is quickly adjustable to either position.

Standard $3/8''$ or $9/32''$ Bonding Bits are easy to install and remove from the collets, which automatically centers them in the collet chuck.

All necessary adjustments are easily made. Adjustable foot rests, steady the machine when drilling through web of rail.

The clamp can be quickly adjusted for different widths of rail heads. The machine is quickly and positively clamped to any rail, whether new or badly worn.

The design is such that the drilling mechanism floats on the clamping device. This provides for wide and exact adjustments of the drill bit, both horizontal and vertical, after the machine has been clamped to the rail.

A means of rapidly advancing or withdrawing the bit, independently of the automatic feed, is provided.

For drilling holes for rail head bonds, an adjustable threaded sleeve is furnished which screws on to the collet chuck cap and acts as a stop when correct depth is reached.

A gauge is furnished with each machine and is used for locating holes for bonds, for setting bit to insure proper depth of holes and for checking depth of holes.

Ordering References

No. 345A — Raco Hand Bonding Drill.
Specify No. 345-137 if also to be used on Head Free Rail.
Approximate net weight: 36 lbs.

Note: Drill will be furnished with one No. 575-14 collet for $3/8''$ bit unless the No. 575-64 collet for $9/32''$ bit is specified. Extra collets may be ordered using these references.

To convert older models, see pamphlet—"Instructions and Parts List, Raco Hand Bonding Drill Nos. 345 and 345A."

SECTION B

Bootlegs

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Raco Parkway Bootleg — General Characteristics 12

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Raco Parkway Bootlegs — 2-Way 17, 18, 21

Raco Bootleg Caps 19

Raco Bootleg Extensions 20

Raco Connector Clamp 22

Raco Track Circuit Connectors 22

GENERAL CHARACTERISTICS OF RACO PARKWAY BOOTLEGS

Raco Parkway Bootlegs are right in design, material and construction.

They are designed to take any size and any combination of parkway conductors and track circuit connectors.

Husky reliable clamping plates of bronze, heavily tinned for clamping parkway and track circuit connectors, are located where they are readily inspected.

The clamps are arranged so that track circuit connectors pass under each bolt, giving extra contact surface and added protection against one bolt loosening.

All cap screws are bronze.

Top castings are completely insulated to prevent grounding and the insulating parts are paraffined.

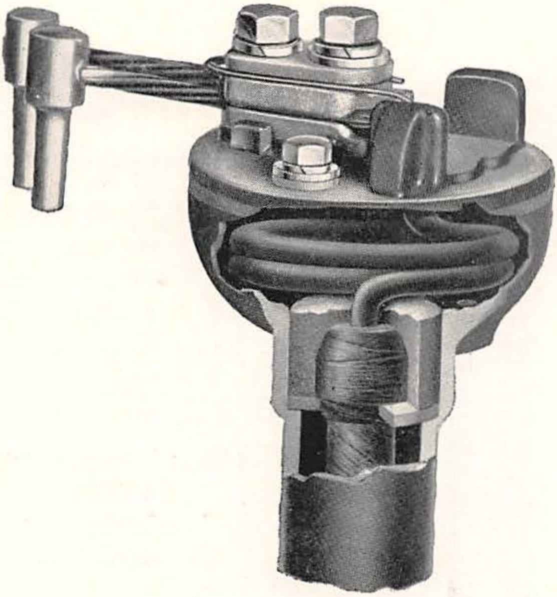
Means are provided for supporting and sealing the parkway in the head of the pedestal.

No vibration or bending strains can reach the parkway conductor.

Sufficient room is provided for slack wire so that Raco Bootleg Extensions (see page 20) can be used when track is raised.

They are available with bottom cable outlet or side and bottom cable outlet.

RACO PARKWAY BOOTLEGS



End of cable is taped and held by fibre washer. Compound is then poured to seal cable end.

We recommend that considerable slack wire be left so Raco Bootleg Extensions (see page 20) can be applied when necessary.

Ordering Information

Orders should state how many (whether one or two) and what diameter track circuit connectors will be used — also size of parkway conductor.

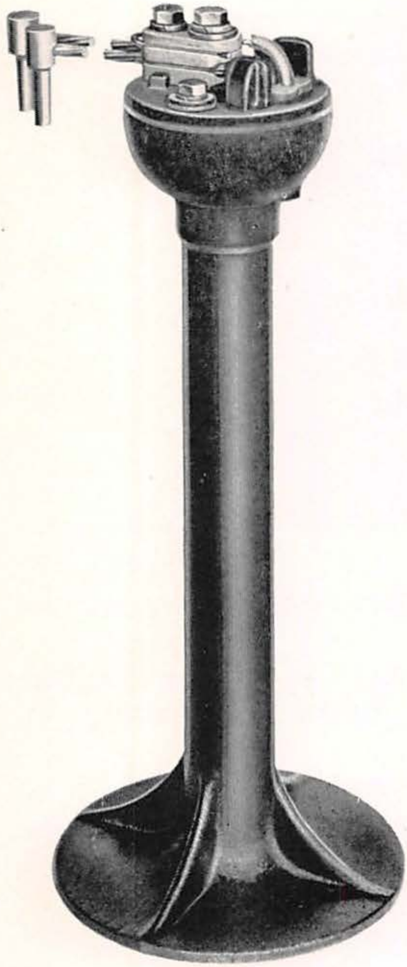
Track Circuit Connectors are not furnished unless specified. (See page 22)

Parts for Bootlegs

Replacement parts blueprints, having ordering references, will be furnished on request.

RACO PARKWAY BOOTLEG

See General Characteristics, page 12.



Ordering References

(Bottom Cable Outlet)

Without Solder Cup

No. 445-1 Bootleg complete with pedestal 1⅜″ inside diameter. Height to track circuit connectors is 17″.

No. 445-2 Same as No. 445-1 except height to track circuit connectors is 21½″.

No. 445-31 Bootleg complete with pedestal 2″ inside diameter. Height to track circuit connectors is 17″.

With Solder Cup

No. 445-20 Bootleg complete with pedestal 1⅜″ inside diameter. Height to track circuit connectors is 17″.

No. 445-59 Same as No. 445-20 except height to track circuit connectors is 21½″.

No. 445-32 Bootleg complete with pedestal 2″ inside diameter. Height to track circuit connectors is 17″.

Orders should state how many (whether one or two) and what diameter track circuit connectors will be used — also size of parkway conductor.

Approximate net weight: 12½ lbs.

RACO PARKWAY BOOTLEG

See General Characteristics, page 12.

Ordering References

(Side and Bottom Cable Outlet)

Without Solder Cup

No. 445-27 Bootleg complete with pedestal 1⅜″ inside diameter. Height to track circuit connectors is 17″.

No. 445-56 Same as No. 445-27 except height to track circuit connectors is 20⅞″.

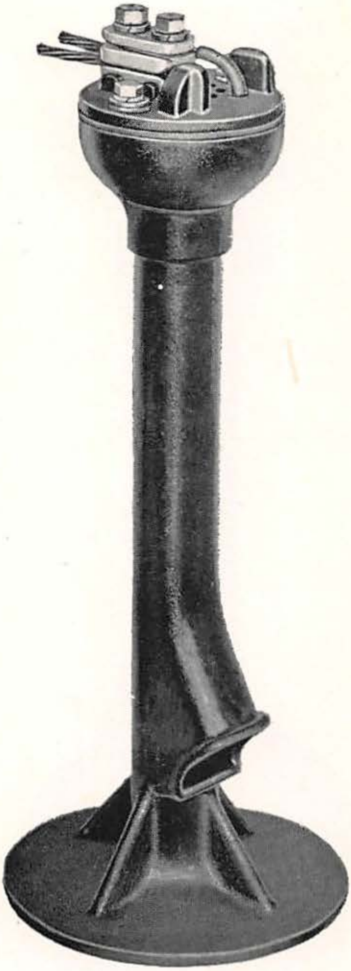
No. 445-36 Bootleg complete with pedestal 2″ inside diameter. Height to track circuit connectors is 18⅞″.

With Solder Cup

No. 445-30 Bootleg complete with pedestal 1⅜″ inside diameter. Height to track circuit connectors is 17″.

No. 445-57 Same as No. 445-30 except height to track circuit connectors is 20⅞″.

No. 445-37 Bootleg complete with pedestal 2″ inside diameter. Height to track circuit connectors is 18⅞″.

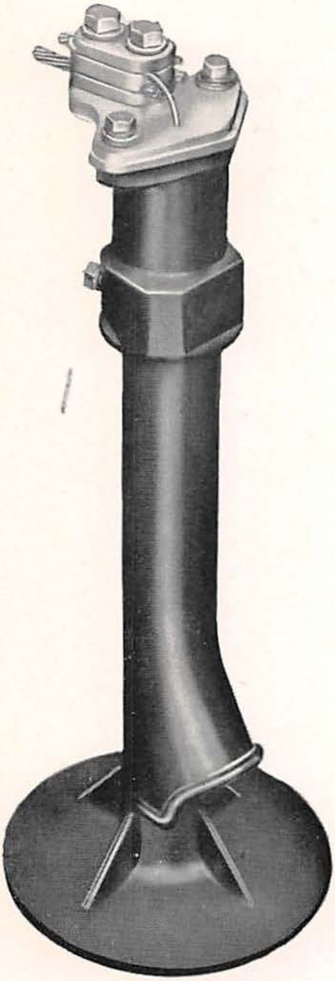


Orders should state how many (whether one or two) and what diameter track circuit connectors will be used — also size of parkway conductor.

Approximate net weight: 12½ lbs.

RACO PARKWAY BOOTLEG

See General Characteristics, page 12.



Ordering References

Without Solder Cup

No. 435-17	Bootleg complete with side and bottom cable outlet (as illustrated). Height to track circuit connectors is 18¾″.
No. 435-6	Bootleg complete with bottom cable outlet only. Height to track circuit connectors is 17″.

With Solder Cup

No. 435-19	Bootleg complete with side and bottom cable outlet. Height to track circuit connectors is 18½″.
No. 435-4	Bootleg complete with bottom cable outlet only. Height to track circuit connectors is 17″.

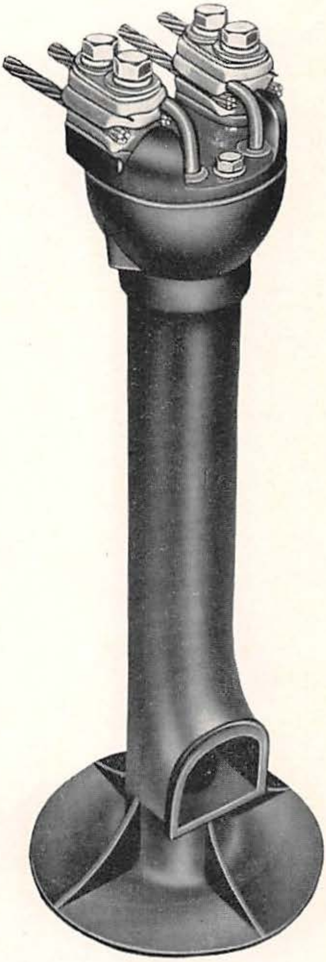
Inside diameter of pedestal is 1½″.

Orders should state how many (whether one or two), and what diameter track circuit connectors will be used — also size of parkway conductor.

Approximate net weight: 12 lbs.

RACO PARKWAY BOOTLEG—2-WAY

See General Characteristics, page 12.



The No. 563 Raco Parkway Bootleg, 2-way, takes 2 or 4 parkway conductors and 2 or 4 track circuit connectors.

The clamps are well insulated from each other and from the bootleg cap base.

The pedestal has a side and bottom cable outlet.

When four parkway conductors are used, especially if slack is to be left in the pothead, we recommend the No. 455 Parkway Bootleg, 2-way (page 18), because the pothead is much larger.

Ordering Reference

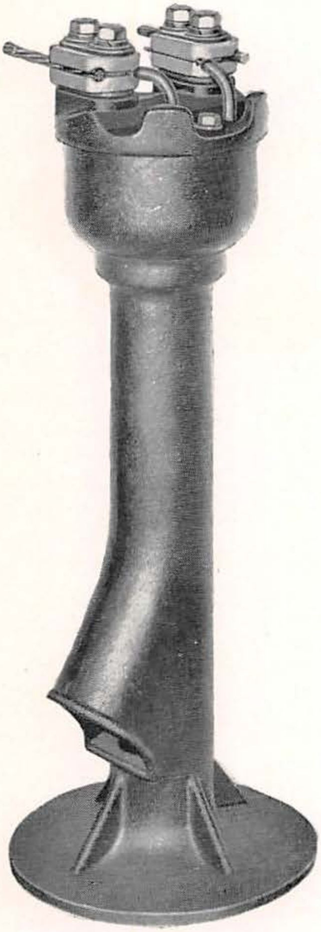
No. 563 Raco Parkway Bootleg, 2-way. Height to track circuit connectors is 19⅛″. Inside diameter of pedestal is 2″.

Orders should state how many track circuit connectors (2 or 4) and how many parkway conductors (2 or 4) will be used. The diameter of the track circuit connectors and the size of the parkway conductors should be given.

Approximate net weight: 15 lbs.

RACO PARKWAY BOOTLEG — 2-WAY

See General Characteristics, page 12.



The No. 455 Raco Parkway Bootleg, 2-way, takes 2 or 4 parkway conductors and 2 or 4 track circuit connectors.

The clamps are well insulated from each other and from the bootleg cap base.

The pedestal has a side and bottom cable outlet.

The No. 563 Raco Parkway Bootleg, 2-way (page 17), is used extensively, especially where practically no slack is left in the pothead.

Ordering Reference

No. 455 Raco Parkway Bootleg, 2-way. Height to track circuit connectors is 18¾″. Inside diameter of pedestal is 2⅛″.

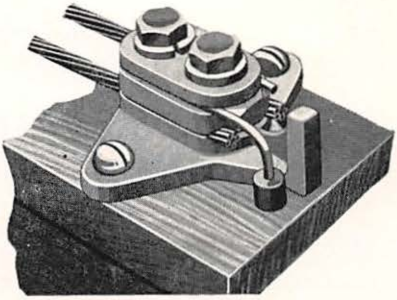
Orders should state how many track circuit connectors (2 or 4) and how many parkway conductors (2 or 4), will be used. The diameter of the track circuit connectors and the size of the parkway conductors should be given.

Approximate net weight: 20 lbs.

RACO BOOTLEG CAPS

Ordering Reference

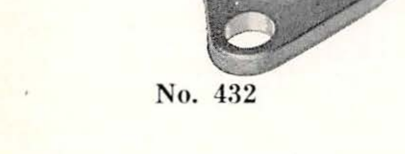
No. 266 Raco Bootleg Cap. Fastening holes are 11/32″ diameter, 2⅞″ centers.



No. 266

Designed for use on any flat surface, such as a concrete foundation, trunking, etc.

Tinned bronze castings with bronze cap screws and lockwashers are provided.



No. 432

Ordering Reference

No. 432-1 Raco Bootleg Cap. Fastening holes are 19/32″ diameter, (unless otherwise specified) and 2⅞″ centers.

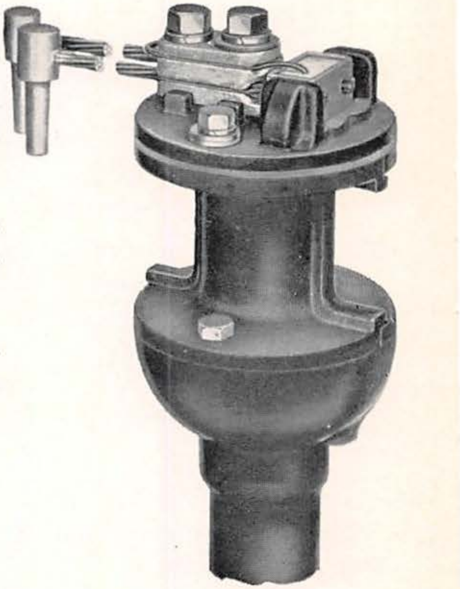
Orders should state how many (whether one or two) and what diameter track circuit connectors will be used—also size of parkway conductor.

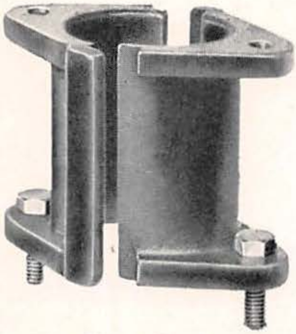
RACO BOOTLEG EXTENSIONS

An inexpensive and convenient means for raising the caps of Raco Bootlegs without breaking the circuit.

Furnished in two parts either two or three inches high and with cap screws as illustrated.

Multiples can be used where necessary, if sufficient slack wire has been left in the pothead.





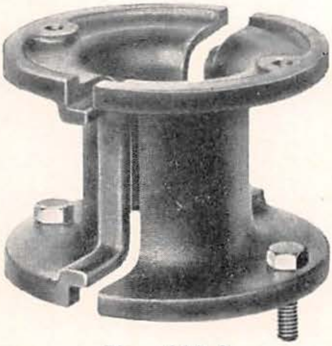
No. 460-7

Ordering References

For Raco Parkway Bootlegs, Nos. 334, 335, 336 and 435.

No. 460-6 Raco Bootleg Extension, 2″ high.

No. 460-7 Raco Bootleg Extension, 3″ high.



No. 460-9

For Raco Parkway Bootlegs, Nos. 445 and 563.

No. 460-8 Raco Bootleg Extension, 2″ high.

No. 460-9 Raco Bootleg Extension, 3″ high.

RACO PARKWAY BOOTLEG — 2-WAY

See General Characteristics, page 12.

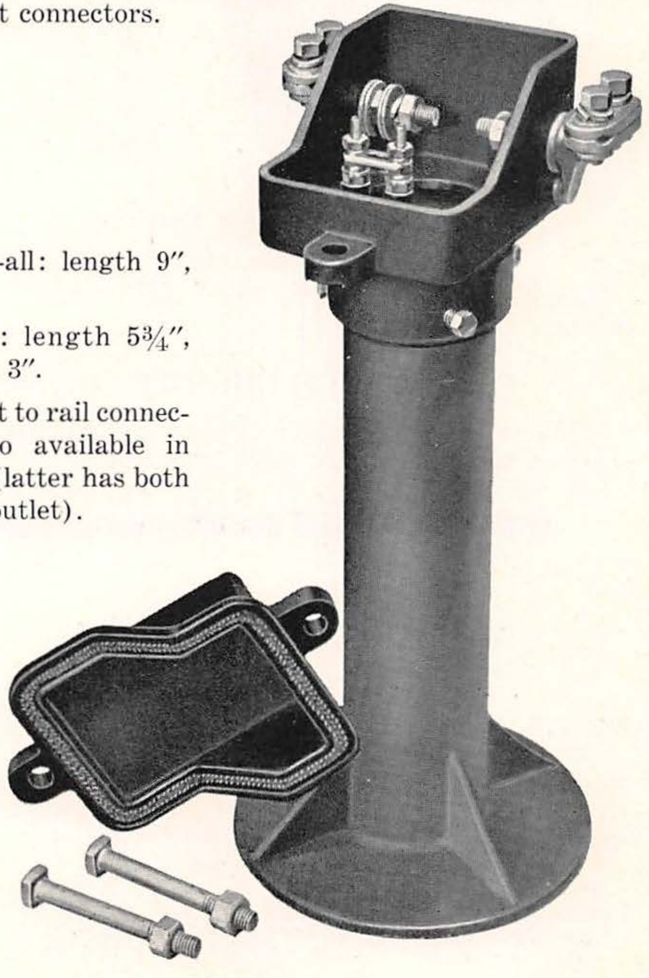
Furnished with either one or two clamps each to take either one or two track circuit connectors. The clamps are thoroughly insulated from the box.

The box can be furnished separately with hook bolts for other mounting.

Ordering References

No. 316-20 Bootleg complete with two outlets, each to take two track circuit connectors.

No. 316-23 Bootleg complete with two outlets, each to take one track circuit connectors.



Dimensions:

Top only, over-all: length 9″, width 8¾″.

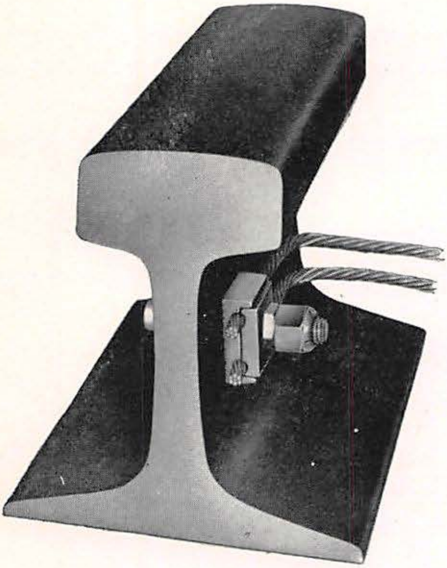
Inside of box: length 5¾″, width 4⅜″, depth 3″.

Standard height to rail connection is 17″. Also available in 23¼″ and 29¼″ (latter has both side and bottom outlet).

Inside diameter riser pipe, 3⅛″.

Approximate net weight: 26 lbs.

RACO CONNECTOR CLAMP



The tapered soft steel pin (cadmium plated) is driven into a ⅜″ hole in the web. Two heavily tinned bronze clamps hold the track circuit connectors between ample contact surfaces and are tightly secured by both a bronze nut and a standard brass elastic stop nut. The clamp will take 3/16″ to ¼″ diameter standard track circuit connectors and the outer clamping piece may be reversed to grip a No. 6 wire.

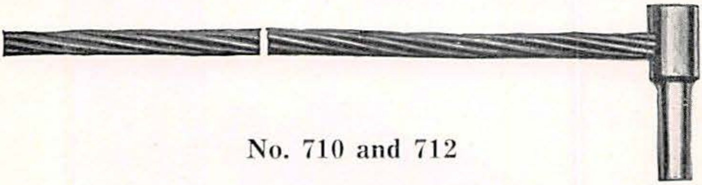
Ordering Reference

No. 474-2 Raco Connector Clamp

Raco Bond Strand (diam. .200″) can be ordered in any length for this use.

RACO TRACK CIRCUIT CONNECTORS

While Raco Parkway Bootlegs can be furnished to take any type of connector specified, we recommend the use of those listed below.



No. 710 and 712

Ordering References

No. 712	Connector, 42″ long, ¼″ diameter, composed of 7 No. 12 AWG 40% Copperweld wires.
No. 712-2	Connector, 42″ long, each ¼″ diameter, composed of two 7 No. 12 AWG 40% Copperweld conductors.
No. 710	Connector, 42″ long, 5/16″ diameter, composed of 7 No. 10 AWG 40% Copperweld wires.

Note: These meet AAR specifications.
Specify whether they are to be thru or butt-weld.
Different lengths can be furnished.

SECTION C

Boxes

Page No.

Raco Terminal, Pole and Test Boxes — General Characteristics 24

Raco Terminal Boxes 25-38

Raco Entrance Seals 32-33

Raco Pole Boxes 39-48

Raco Test Boxes 49-52

Raco Lead Knockouts 53

Special Outlets for Boxes 54

GENERAL CHARACTERISTICS OF RACO TERMINAL, POLE AND TEST BOXES

A variety of Raco Terminal Boxes are available and may be adapted for all parkway cable installations.

In addition to those illustrated, we have designed many boxes to meet particular needs.

Raco Boxes can be furnished with clamps or U-bolts for pole mounting, or with hook bolts for fastening to concrete.

True alignment of covers is assured by highest quality castings and careful machining.

Gaskets are impregnated braided fabric, securely fastened in the grooves.

Hardwood Terminal Boards are furnished.

Eyebolts, locking nuts, and hinge pins are of bronze.

Various outlets (page 54) (box connectors, air hose adaptors, Raco Entrance Seals, mast entrances, reducing bushings, pipe taps and pipe plugs, Raco Lead Knockouts (page 53), and various watertight connectors), may be placed where desired.

The water-shedding side outlets on the pole boxes are insulated with hardwood bushings.

Raco Multi-unit or Raco Universal Terminals, are usually mounted on hardwood terminal boards.

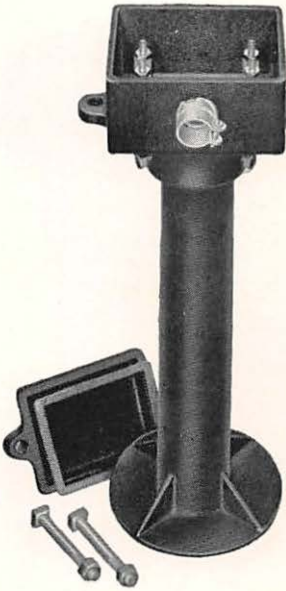
Screened ventilators can be provided.

A phone jack may be installed where there is sufficient room.

Consult Raco if you have a box problem.

No. 463 RACO TERMINAL BOX

See General Characteristics, page 24.



Ordering Reference

No. 463 Raco Terminal Box

Please order by number and specify:

(A) Height overall: 18″, 23½″ or 33½″.

(B) Number of terminals: 2 Raco Multiunit Terminals is standard. (4 can be provided.)

(C) Number and location of box connectors. Maximum size of box connector is 1½″.

Dimensions:

Inside of box—5½″ long, 4⅛″ wide, 3¼″ deep (including cover).

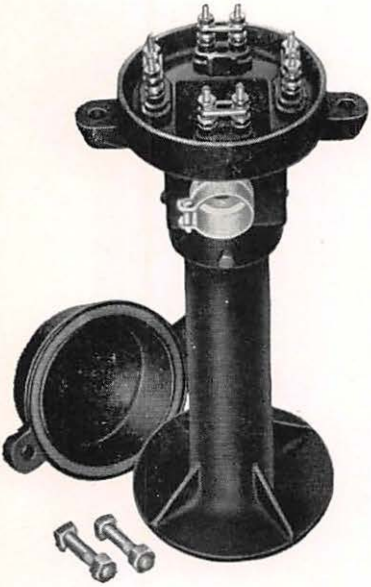
Inside diameter of pedestal—2½″.

Bolt holes—9/16″ diameter, 7″ centers.

Approximate net weight: 18″—21 lbs., 23½″—22 lbs., 33½″—29 lbs.

No. 313 RACO TERMINAL BOX

See General Characteristics, page 24.



Ordering Reference

No. 313 Raco Terminal Box

Please order by number and specify:

(A) Height overall: 21″, 26½″ or 36½″.

(B) Number of terminals (takes up to 6 Raco Multi-unit Terminals).

(C) Number and size of box connectors. Maximum size—1½″.

Dimensions:

Inside of box—diameter 6″, depth 3″ (with cover in place), recess 3″x3″x3″.

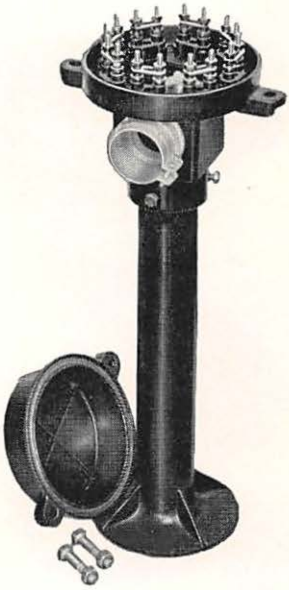
Inside diameter of pedestal—2½″.

Bolt holes—9/16″ diameter, 7¾″ centers.

Approximate net weight: 21″—26 lbs., 26½″—28 lbs., 36½″—34 lbs.

No. 470 RACO TERMINAL BOX

See General Characteristics, page 24.



Ordering Reference

No. 470 Raco Terminal Box

Please order by number and specify:

(A) Height overall: 21½″, 27″ or 37″.

(B) Number of terminals (takes up to 8 Raco Multi-unit Terminals).

(C) Number and size of box connectors. Maximum size—2″.

Dimensions:

Inside of box—diameter 7½″, depth 3″ (with cover in place), recess 3⅝″x3⅝″x3⅝″.

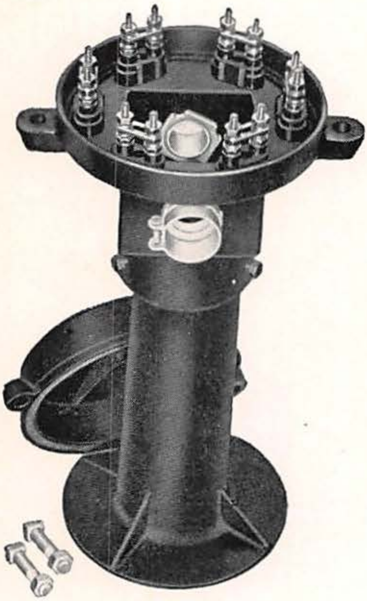
Inside diameter of pedestal—2½″.

Bolt holes—9/16″ diameter, 9⅛″ centers.

Approximate net weight: 21½″—29 lbs., 27″—31 lbs., 37″—37 lbs.

No. 139 RACO TERMINAL BOX

See General Characteristics, page 24.



Ordering Reference

No. 139 Raco Terminal Box

Please order by number and specify:

(A) Number of terminals (takes up to 14 Raco Multi-unit Terminals).

(B) Number and size of box connectors. Maximum size 2″.

Dimensions:

Height overall—21¾″.

Inside of box—diameter 8⅜″, depth 3″ (with cover in place), recess 4⅛″x4⅛″x3⅜″ deep.

Inside diameter of pedestal—3⅝″.

Bolt holes—9/16″ diameter, 10″ centers.

Approximate net weight: 38 lbs.

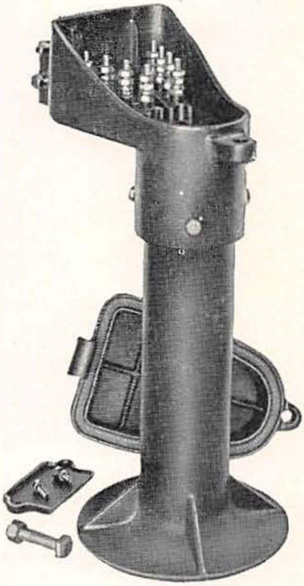
Nos. 464 and 517 RACO TERMINAL BOXES

See General Characteristics, page 24.

Ordering Reference

No. 464 Raco Terminal Box with Raco Entrance Seal (page 32) cast as part of the box.

No. 517 Raco Terminal Box is same as No. 464, except without Raco Entrance Seal. This box can be equipped with box connectors (Maximum size 1½") or air hose adapter for 1½" I.D., or 1⅞" I.D. air hose. Specify sizes.



Please order by number and specify:

(A) Height overall:
- 21" with bottom outlet pedestal.
- 27" with bottom outlet pedestal.
- 33" with side and bottom outlet pedestal.
- 36¾" with side and bottom outlet pedestal.

(B) Number of terminals (takes up to 8 Raco Universal Terminals).

Dimensions:

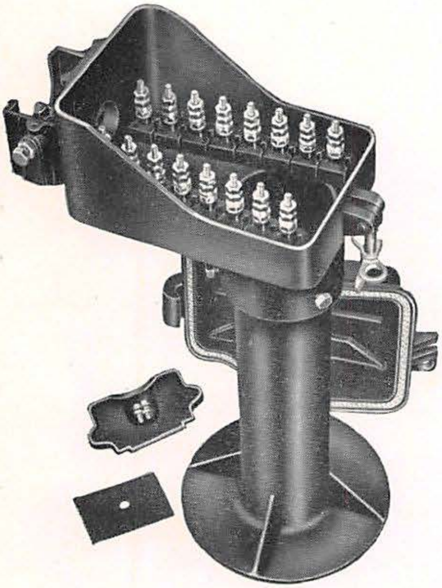
Inside of box—greatest length 7⅝", greatest width 5½".

Inside diameter of pedestal—3⅛".

Approximate net weight: 20½"—30 lbs., 26¾"—36 lbs., 32¾"—40 lbs., 36⅜"—51 lbs.

Nos. 483 and 583 RACO TERMINAL BOXES

See General Characteristics, page 24.



Ordering Reference

No. 483 Raco Terminal Box with Raco Entrance Seal (page 32) cast as part of the box.

No. 583 Raco Terminal Box is the same as No. 483 except, without Raco Entrance Seal. This box can be equipped with 2″ box connector, or air hose adapter for 1½″ I.D., or 1⅞″ I.D. air hose. Specify size of box connector or air hose adapter.

Please order by number and specify:

(A) Height overall:

21″ with bottom outlet pedestal.

27″ with bottom outlet pedestal.

33″ with side and bottom outlet pedestal.

36¾″ with side and bottom outlet pedestal.

(B) Number of terminals (takes up to 16 Raco Universal Terminals).

Dimensions:

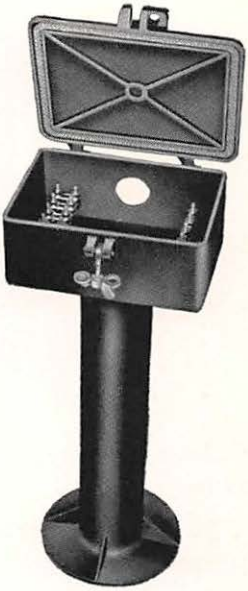
Inside of box 8¾″ long, 6″ wide, depth varies from 4⅝″ at front to 3¼″ at rear.

Inside diameter of pedestal—3⅛″.

Approximate net weight: 20¾″—36 lbs., 27″—42 lbs., 33″—46 lbs., 36⅝″—57 lbs.

No. 428 RACO TERMINAL BOX

See General Characteristics, page 24.



The No. 428 Box can be equipped with a deeper cover, giving 1½″ extra inside depth.

Ordering References

No. 428-10 Raco Terminal Box, mounted on cast iron pedestal, with 1-11/16″ diameter hole for air hose adapter and 6 Raco Multi-unit Terminals (12 posts) and 6 Raco Universal Terminal posts.

No. 428-11 Raco Terminal Box. Same as No. 428-10 except without 1-11/16″ diameter hole.

If boxes are desired equipped other than described, specify:

(A) Number, type, and arrangement of terminals.

(B) Number, size and location of air hose adapters (for 1½″ I.D. or 1⅞″ I.D. air hose) and box connectors. Maximum size—2″.

(C) If deeper cover (1½″) is required.

Dimensions:

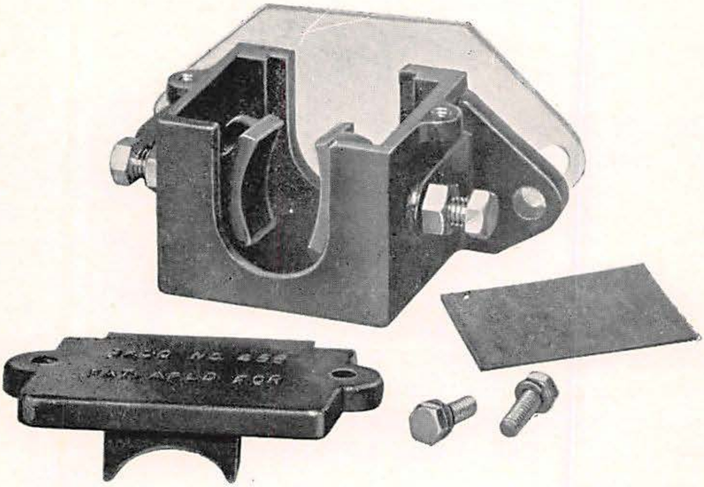
Inside of box—10″ long, 7″ wide, 4″ deep.

Inside diameter of pedestal—3⅝″.

Overall height—26⅞″. Pedestal hole in bottom of box is 3⅝″.

Approximate net weight: 48 lbs.

No. 458 or 493 RACO ENTRANCE SEALS



Raco Entrance Seals provide an improved wire connection to switch machines, switch circuit controllers, dwarf signals, etc.

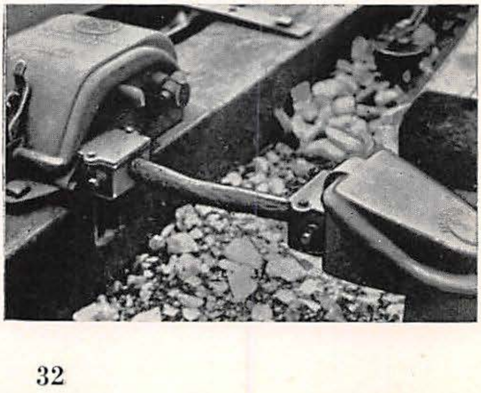
It is used to clamp, and seal with compound, flexible conduit or jumper wires and to seal the switch box entrance against dirt and water.

Gaskets are easily cut and fitted in the field to take any size cable or flexible conduit.

Ordering References

No. 458-1 Raco Entrance Seal complete (for G.R.S. Switch Circuit Controllers Models 7 and 8). Takes up to 1½″ diameter cable.

No. 493-1 Raco Entrance Seal as above but takes up to 2⅜″ cable or flexible duct.



Shown used with
Boxes No. 464 or No. 483.

RACO ENTRANCE SEALS

Ordering References

No.	
458-4	Raco Entrance Seal with Adapter for G.R.S. Model 4 or 4A Switch Machine.
458-16	Adapter only as above with bolts, lock washers and hex nuts.
458-22	Raco Entrance Seal with Adapter for U.S.&S. Switch Circuit Controller, Types U-3, U-4, U-5 and U-6.
458-23	Adapter only as above with gasket and cap screws with nuts and lock washers.
458-27	Raco Entrance Seal with Adapter for G.R.S. Model 5A Switch Machine.
458-28	Adapter only as above with screws and lock washers.
458-32	Raco Entrance Seal (bottom entrance), complete with Adapter for U.S.&S. Dwarf Signal.
458-33	Raco Entrance Seal with Adapter for U.S.&S. Style M2 and M20 Electric Switch Machines.
458-34	Adapter only as above with hasp and two $\frac{3}{8}$″-16x1″ cap screws.
453-53	Raco Entrance Seal with Adapter for G.R.S. Model 9, Hand Operated Switch Machine.

No. 307 RACO TERMINAL BOX

See General Characteristics, page 24.

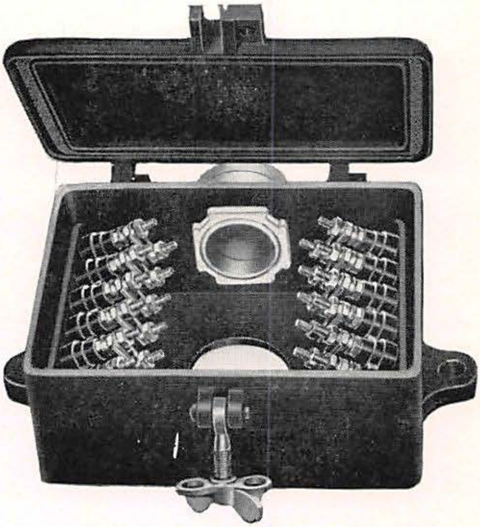
Ordering References

No. 307-20 Raco Terminal Box with 12 Raco Multi-unit Terminals (24 posts), with 3″ hole in center of bottom and 2″ box connector in back of box, (as shown).

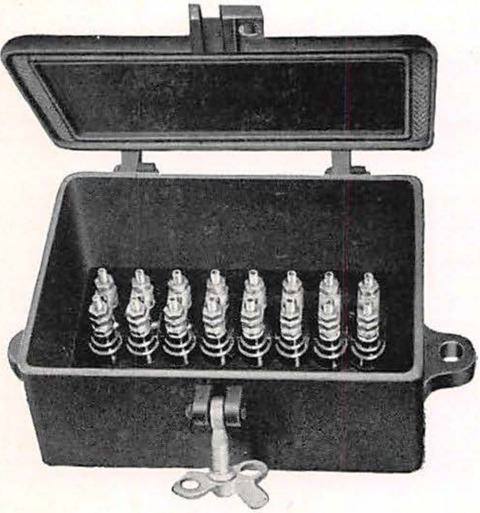
No. 307-21 Raco Terminal Box with 8 Raco Multi-unit Terminals (16 posts) but without hole in bottom or Box Connector (as shown).

The No. 307 Box can be furnished with any arrangement of terminals and box connectors. Maximum size of box connectors—2″.

The No. 307 Box can be equipped with a deeper cover, giving 1½″ extra inside depth.



No. 307-20



No. 307-21

Dimensions:

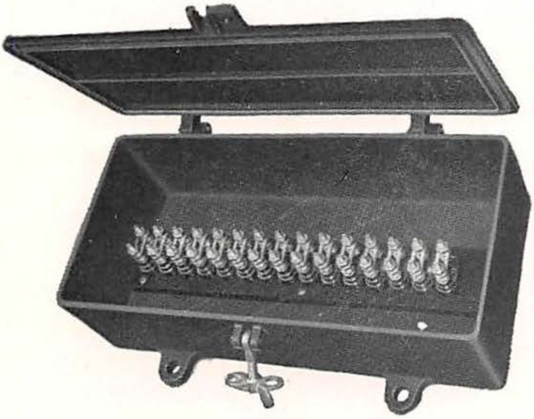
Inside of box—10″ long, 7″ wide, 4″ deep.

Bolt holes—9/16″ diameter, 12″ centers.

Approximate net weight: 307-20—24 lbs., 307-21—26 lbs.

No. 315 RACO TERMINAL BOX

See General Characteristics, page 24.



Ordering References

No. 315-16 Raco Terminal Box, equipped with 15 Raco Multi-unit Terminals (30 posts) as shown.

The No. 315-16 box can be mounted on cast iron foundation pedestals No. 254-16 (2′6″ high—2 required).

No. 315-6 Raco Terminal Box, equipped with 15 Raco Multi-unit Terminals (30 posts). It differs from the No. 315-6 box in that the fastening lugs are on the ends instead of the sides.

If boxes are desired equipped other than described, specify:

(A) Number and arrangement of terminals.

(B) Number, size and location of terminal boards, outlets, or box connectors.

Dimensions:

Inside of box—18$\frac{5}{8}$″ long, 8$\frac{1}{2}$″ wide, 5″ deep.

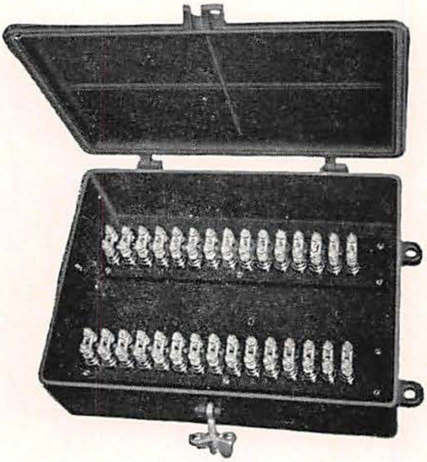
Bolt hole Centers—Box No. 315-16—10$\frac{5}{8}$″ x 11″.
Box No. 315-6—8$\frac{1}{2}$″ x 20$\frac{5}{8}$″.

Diameter of bolt holes—11/16″.

Approximate net weight: 56 lbs.

No. 224 RACO TERMINAL BOX

See General Characteristics, page 24.



Ordering Reference

No. 224-1 Raco Terminal Box, equipped with 30 Multi-unit Terminals (60 posts), as shown.

If boxes are desired equipped other than described, specify:

(A) Number and arrangement of terminals.

(B) Number, size, and location of terminal boards, outlets, or box connectors.

Dimensions:

Inside of box—18⅝″ long, 13″ wide, 5¾″ deep.

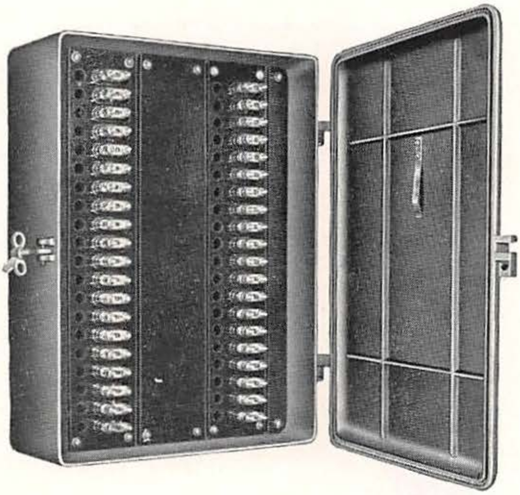
Bolt hole centers—8½″ x 20⅝″.

Diameter of bolt holes—11/16″.

Approximate net weight: 68 lbs.

No. 496 RACO TERMINAL BOX

See General Characteristics, page 24.



Ordering Reference

No. 496-1 Raco Terminal Box with 40 Raco Multi-unit Terminals (80 posts), as shown. These terminals are mounted on a panel 3¼″ above the bottom of box, to allow room for the wiring behind the panels. A removable panel is located in the center as shown. Two 3¾″ diameter holes for 3″ conduit are usually placed in the back of the box (under the removable panel).

If boxes are desired equipped other than described, specify:

(A) Number and arrangement of terminals.

(B) Number, size and location of panel boards, outlets, or box connectors.

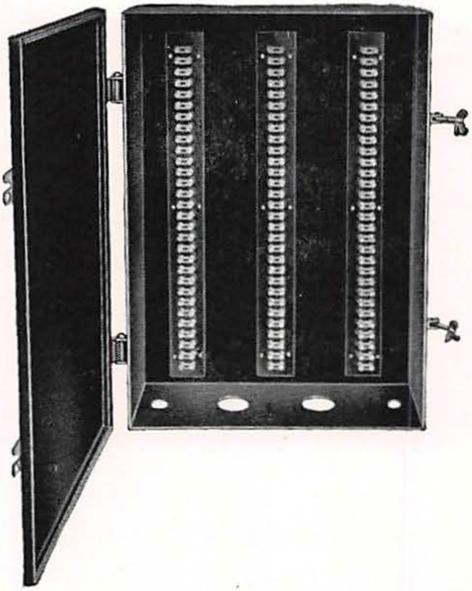
Dimensions:

Inside of box—23½″ long, 17½″ wide, 7-9/16″ deep.

Approximate net weight, equipped as shown: 125 lbs.

No. 288 RACO TERMINAL BOX

See General Characteristics, page 24.



The No. 288 Raco Terminal Box and Cover is made of 1/8″ sheet steel, with welded seams and corners.

Ordering References

No. 288-16 Raco Terminal Box is equipped with 90 Raco Multi-unit Terminals (180 posts). Specify number and size of outlet holes.

No. 288-17 Same as No. 288-16, except with terminal boards, but without terminals.

If boxes are desired equipped other than described, specify:

(A) Number and arrangement of terminals.

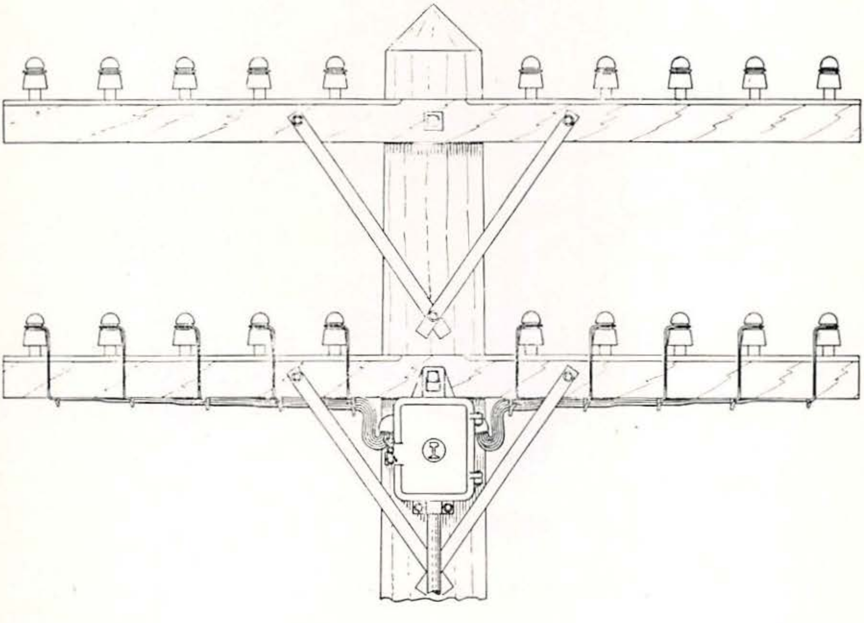
(B) Number, size, and location of terminal boards, outlets, or box connectors.

Dimensions:

Inside of box—37½″ long, 26″ wide, 10⅞″ deep.

Approximate net weight: 288-16—165 lbs., 288-17—145 lbs.

RACO POLE BOXES



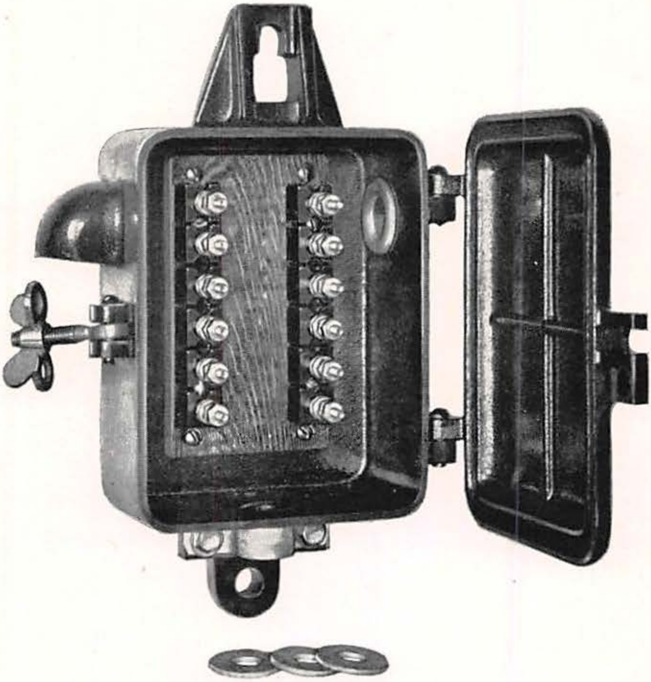
Raco Pole Boxes are used for distributing wires.

The deeper boxes are also used as lightning arrester boxes.

They are equipped with two or more side outlets, and one or more bottom outlets. The side outlets are designed to shed water and are insulated with hard wood bushings.

No. 425 RACO POLE BOX

See General Characteristics, page 24.



Ordering References

No. 425-1 Raco Pole Box, 3½″ deep, with 12 Raco Universal Terminals, mounted on a terminal board.

No. 425-2 Raco Pole Box as above, except 5½″ deep.

Three filler washers are furnished for use at lower end to align box with pole.

Dimensions:

Inside of box—9″ long, 7″ wide, 3½″ (or 5½″) deep.

Bolt holes—11/16″ diameter, 13⅝″ centers.

Diameter of bottom cable entrances—1⅜″.

Inside diameter of wooden side outlet bushings— 1⅛″.

Approximate net weight: 425-1—24 lbs., 425-2—27 lbs.

No. 487 RACO POLE BOX

See General Characteristics, page 24.

No. 487 Raco Pole Box is the same in design as the No. 425. It, however, is larger and is designed to clear the crossarm braces, and can be used between crossarms.

Ordering Reference

No. 487-1 Raco Pole Box is equipped with a terminal board, but terminals are not included unless specified.

Dimensions:

Inside of box—18″ long, 9″ wide, 5½″ deep.

Diameter of bottom cable entrance—2″.

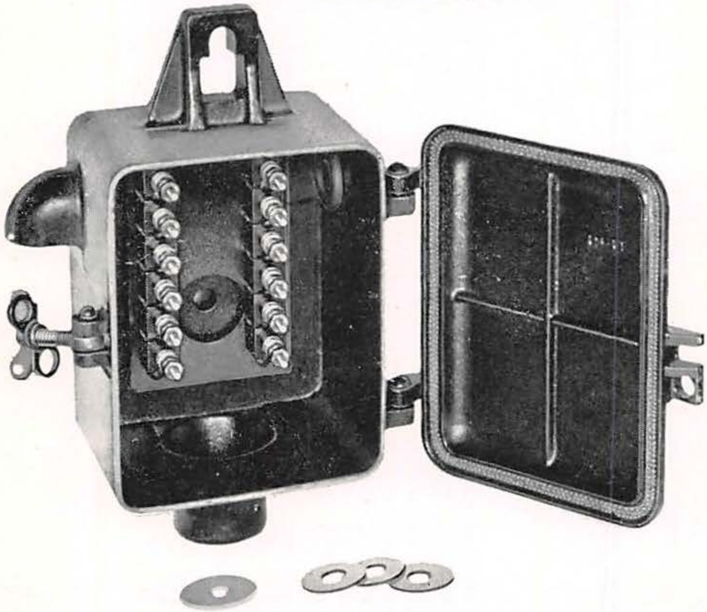
Inside diameter of side outlet bushings—1½″.

Bolt holes—11/16″ diameter, 19¼″ centers.

Approximate net weight: 52 lbs.

No. 480 RACO POLE BOX

See General Characteristics, page 24.



No. 480 Raco Pole Box has the same dimensions and equipment as the No. 425, page 40, except that it is equipped with a pothead cable entrance in the bottom, instead of a cable clamp. It also has a 5/8″ fastening hole in the back.

The pothead takes cable up to 1½″ in diameter. A fibre washer is furnished which rests on an offset at the bottom of the pothead. The cable end is taped and pressed into the washer, and compound poured into the pothead to seal the cable end.

Three filler washers are furnished for use at lower end to align box with pole.

Ordering References

No. 480-1 Raco Pole Box, 5½″ deep, with 12 Raco Universal Terminals, mounted on a terminal board.

No. 480-2 Raco Pole Box as above, except 3¾″ deep.

No. 531-1 Same as No. 480-1 but without lug for crossarm thru bolt and hole for lag screw. It has 4 lugs mounted at the corners, each with 9/16″ diameter holes (9″ centers—width of box) to fasten to 8″ post with 2 U-bolts, which are included.

Dimensions:

Inside of box—9″ long, 7″ wide, 3¾″ (or 5½″) deep.

Bolt holes—11/16″ diameter.

Inside diameter of wooden side outlet bushings—1⅛″.

Approximate net weight: 480-1, 531-1—30 lbs., 480-2—34 lbs.

No. 469 RACO POLE BOX

See General Characteristics, page 24.

No. 469 Raco Pole Box is the same in design as the No. 480. However, it is larger and is designed to clear the crossarm braces, and can be used between crossarms.

It has two side outlets equipped with hard wood bushings and with slide plates (see Box No. 436, page 44) to close, in effect, the side outlets.

Ordering References

No. 469-2 Raco Pole Box, 4″ deep, with two 12-post Raco Universal Terminals mounted on terminal board. Inside diameter of the wooden side outlet bushing is 1½″.

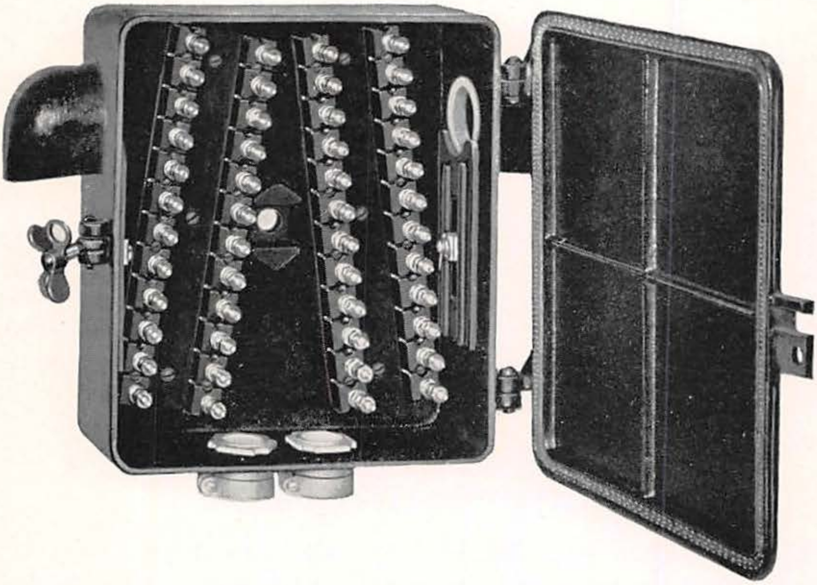
No. 469-16 Raco Pole Box, 5½″ deep, with two 12-post Raco Universal Terminals mounted on terminal board. Inside diameter of the wooden side outlet bushing is 2¼″.

Dimensions:

Inside of box—14″ long, 7″ wide, 4″ (or 5½″) deep.
Maximum diameter of cable—2½″.
Fastening bolt centers—11-7/16″.
Approximate net weight: 469-2—38 lbs., 469-16—42 lbs.

No. 436 RACO POLE BOX

See General Characteristics, page 24.



No. 436 Raco Pole Box is designed to be bolted to the pole with a ¾″ diameter square head bolt.

It has two side outlets equipped with hard wood bushings and with Slide Plates to close, in effect, the side outlets.

Ordering References

No. 436-1 Raco Pole Box is equipped with four 12-post Raco Universal Terminals, mounted on a terminal board. Also with two 1¼″ box connectors.

No. 436-2 Raco Pole Box is equipped with two 12-post Raco Universal Terminals, mounted on a terminal board. (These are the inner two as shown.) Also with two 1¼″ box connectors.

If boxes are desired equipped other than described, specify:

(A) Number and arrangement of terminal boards and terminals.

(B) Number, size and location of box connectors. Maximum size 2″.

Dimensions:

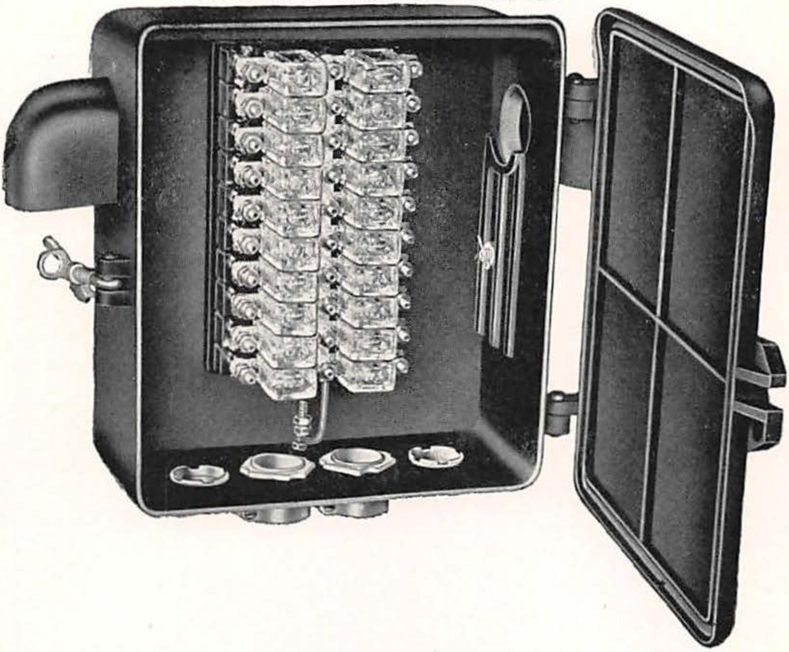
Inside of box—13½″ long, 12″ wide, 4″ deep.

Inside diameter of wooden side outlet bushings—2¼″.

Approximate net weight: 55 lbs.

No. 533 RACO POLE BOX

See General Characteristics, page 24.



No. 533 Raco Pole Box is generally the same as the No. 436, except that it is one inch deeper.

Ordering References

No. 533-1 Raco Pole Box with 30 Raco Universal Terminals, mounted on a terminal board in three rows, and spaced 2⅜″ centers with a ground connection. Box is arranged for mounting on a round pole by means of a ¾″ square head bolt. Four holes in the bottom are fitted with two 1¼″ box connectors and 2 Raco Lead Knockouts (page 53).

No. 533-2 Raco Pole Box, same as No. 533-1, except without thru-bolt hole and Universal Terminals, and with four holes (spaced 9″ horizontally and 9½″ vertically) for bolting to an 8″ square post. Three 2-7/16″ diameter holes in the bottom are plugged by Raco Lead Knockouts.

If boxes are desired equipped other than described, specify:

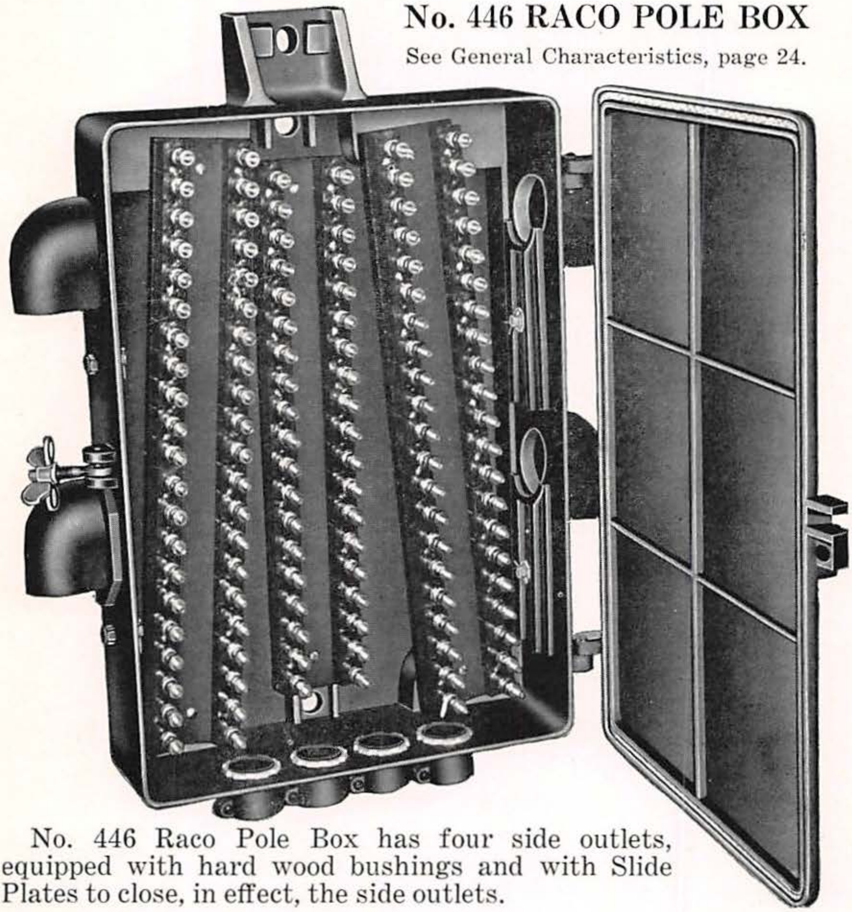
(A) Number and arrangement of terminal boards and terminals.
(B) Number, size, and location of box connectors (maximum size 2″) and lead knockouts.

Dimensions:

Inside of Box—13½″ long, 12″ wide, 5″ deep.
Inside diameter of wooden side outlet bushings—2¼″.
Approximate net weight: 60 lbs.

No. 446 RACO POLE BOX

See General Characteristics, page 24.



No. 446 Raco Pole Box has four side outlets, equipped with hard wood bushings and with Slide Plates to close, in effect, the side outlets.

The two lower outlets are bolted on and can be omitted.

Three 13/16″ fastening holes are provided.

Ordering Reference

No. 446-1 Raco Pole Box is equipped with 122 single post Universal Terminals, mounted on terminal boards. It has four 1¼″ box connectors.

If boxes are desired equipped other than described, specify:

(A) Number and arrangement of terminal boards and terminals.

(B) Number, size, and location of box connectors. Maximum size 2″.

(C) If two or four side outlets are required.

Dimensions:

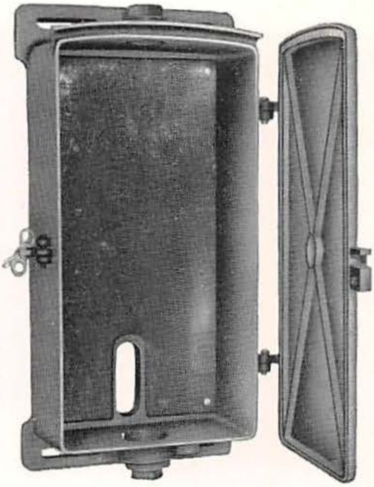
Inside of box—22½″ long, 16″ wide, 4″ deep.

Inside diameter of outlet bushing—2¼″.

Approximate net weight: 110 lbs.

No. 431 RACO POLE BOX

See General Characteristics, page 24.



The No. 431 Raco Pole Box is designed to be fastened to steel poles from 3 to 8 inches in diameter, by means of U-bolts.

The top of the box has a 3¼″ diameter boss, tapped for a 2″ pipe connection. The bottom has a 3⅝″ boss tapped for a 2½″ pipe connection. There is an additional 2″diameter boss on the bottom which can be drilled and tapped if needed.

The elongated hole can be closed with a Raco Lead Knockout (page 53).

Raco Multi-unit or Universal Terminals may be mounted as desired.

Ordering Reference

No. 431-1 Raco Pole Box complete with two U-bolts for 3″ mast, and with a 2″ cast iron pipe plug in the top. The bottom is fitted with a 2½″ x 2″ reducing bushing and a 2″ cast iron pipe plug. A 4⅛″ x 1½″ mast entrance is cored in the back. A terminal board is mounted in the back of the box.

If boxes are desired equipped other than described, specify:

(A) Number and arrangement of terminal boards and terminals.

(B) Number, type and location of outlets.

(C) Whether mast entrance is to be left open or closed with a Raco Lead Knockout.

(D) Pole size.

Dimensions:

Inside of box—20″ long, 10½″ wide, 5⅝″ deep.

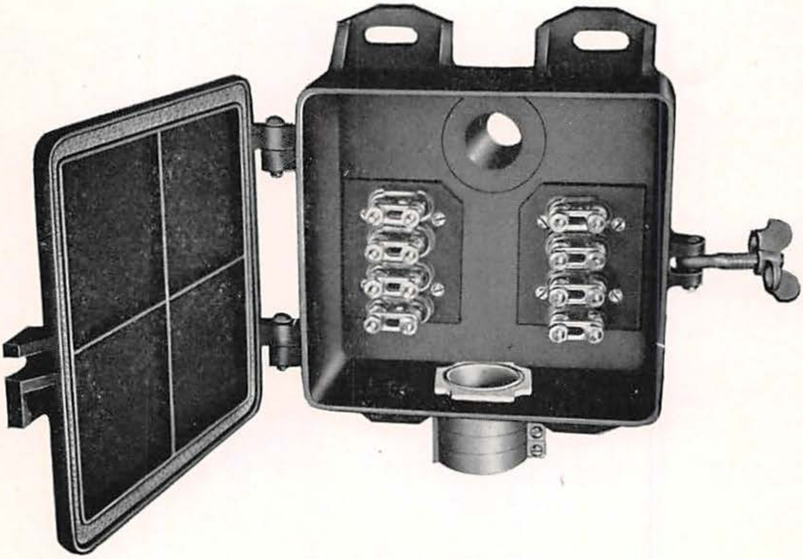
Dimension of mast entrance—4⅛″ x 1½″.

Outer dimension of oval mast entrance—4½″ x 1⅞″.

Approximate net weight: 72 lbs.

No. 403 RACO POLE BOX

See General Characteristics, page 24.



The No. 403 Raco Pole Box is designed for mounting on a 4″, 5″ or 6″ steel pole. It takes up to fourteen (28 posts) Raco Multi-unit Terminals. A 2⅜″ hole in the back of the box has a rubber bushing (1⅝″ I.D.) for entry into the pole.

Ordering References

No. 403-1 Raco Pole Box with U-bolts for 4″ pole equipped with eight Raco Multi-unit Terminals, mounted on a terminal board. It is equipped with a 2″ box connector.

No. 403-2 Same as No. 403-1 but with U-bolts for 5″ pole.

No. 403-8 Same as No. 403-1 but with U-bolts for 6″ pole.

If boxes are desired equipped other than described, specify:

(A) Number, type and arrangement of terminals.

(B) Size of box connector. Maximum size—2″.

Dimensions:

Inside of box—8¾″ long, 9½″ wide, 4″ deep.

Approximate net weight: 38 lbs.

RACO TEST BOXES

Raco Test Boxes are widely used for testing crossing signals, etc. They are made up in different arrangements for a number of circuits, as listed.

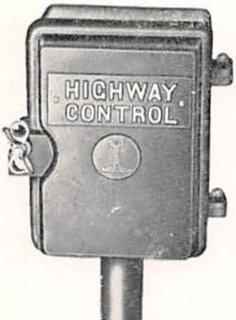
They are well made and equipped with high grade fittings. Push buttons and switches are of superior construction.

All types in which switches are used are so made that the door of the box cannot be closed until the switch is in its normal position.

Push buttons are mounted on ebony asbestos blocks with necessary AAR binding posts.

No. 307 RACO TEST BOX

See General Characteristics, page 24.



No. 307 Raco Test Box can be furnished mounted on a 2″ diameter pipe of the required length, fitted with a 7½″ diameter base. This base has four 13/16″ holes for bolting the complete unit to a concrete foundation or other means of support.

The box is also available with lugs on the top and bottom for bolting to an apparatus housing, in which case, it is provided with a bushed hole to permit cable entry thru the back of the box.

The box with lugs may also be fastened to a 4″ or 5″ pole by means of adapter straps and U-bolts.

Bronze plates may also be fastened to the cover identifying the box as "Highway Control" or "Manual Control".

Up to six high grade push buttons, normally open and closed, may be mounted on the bakelite panel board.

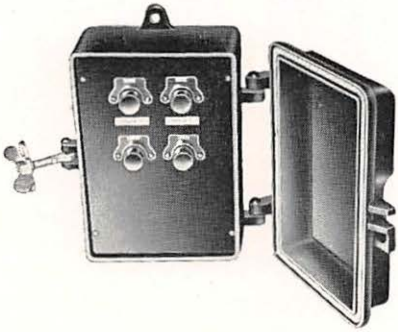
Plates designate individual buttons as "Raise", "Lower", "Start", or "Stop", and larger plates, identifying one or a group of buttons as "Westbound", "Eastbound", "Track No. 1", or "N-W Track", etc., are available.

Other equipment may be mounted on the panel board as specified.

Raco Universal Terminals are mounted behind the bakelite panel where they cannot be disturbed by unauthorized personnel.

An ebony asbestos panel mounted inside the cover, affords a surface for posting instructions.

No. 307 RACO TEST BOX



Ordering Reference

Please order by number and specify:

(A) Whether box is to be furnished with:

1. Pipe (specify length) and base.
2. Lugs, top and bottom, mast entrance hole and bushing.
3. Lugs, top and bottom, mast entrance hole and bushing, and straps (to fasten to 4″ or 5″ mast (specify).

(B) Number of Raco Universal Terminals.

(C) Number of push buttons (normally open and closed) and how they shall be marked.

(D) Plate to be attached to outside of cover.

(E) Any changes, additions, or variations desired.

Dimensions:

Inside of box—10″ long, 7″ wide, 5½″ deep (including cover).

Back of box to back of bakelite panel—3½″.

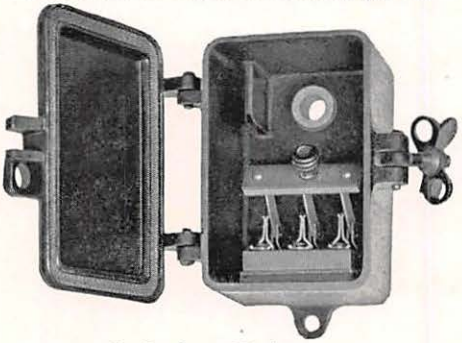
Inside diameter of outlet bushings—⅝″ diameter bolt holes, 12″ centers.

Approximate net weight: 28 lbs.

Plans are available for those interested.

No. 399 RACO TEST BOXES

See General Characteristics, page 24.



No.	Ordering References
399	Raco Test Box without switch.
399-1	Raco Test Box with triple pole, single throw switch, for normally open circuit.
399-2	Raco Test Box with triple pole, single throw switch, for normally closed circuit.
399-3	Raco Test Box with double pole, double throw switch, for normally open or closed circuit.
399-14	Raco Test Box with one 4-pole, single throw switch, for normally closed circuit.
399-15	Raco Test Box with one 4-pole, single throw switch, for normally open circuit.
399-19	Raco Test Box with double pole, double throw switch, for normally closed circuit.
399-21	Raco Test Box equipped with single contact bayonet base lamp receptacle and single high grade push button, for normally open circuit.
399-25	Raco Test Box equipped with single contact bayonet base lamp receptacle and single high grade push button, for normally closed circuit.
399-26	Raco Test Box equipped with single contact bayonet base lamp receptacle and one normally open and one normally closed high grade push button.
399-29	Raco Test Box with two No. 160 Raco Knife Switches, for normally closed circuit.
399-31	Raco Test Box with one normally open and one normally closed high grade push button.
399-35	Raco Test Box with two single pole, single throw switches, one for normally open circuit and one for normally closed circuit.

Dimensions:

Inside of box—6⅝″ long, 4⅜″ wide, 3¾″ deep.

Bolt holes—7/16″ diameter, 8″ centers.

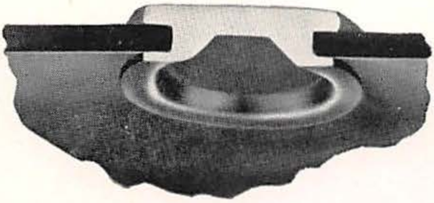
Diameter of outlet bushing, ¾″.

Approximate net weight: 12 lbs.

RACO LEAD KNOCKOUTS

Several years ago, there arose a demand for Knockouts for use in Terminal, Pole and Test Boxes.

At that time we developed what is known as Raco Lead Knockouts, as illustrated.



The circular form is shown before and after application.

All Knockouts are designed approximately 1/16″ smaller than the holes.

These can be furnished separately, or applied to any of our boxes, as may be specified.

Ordering References

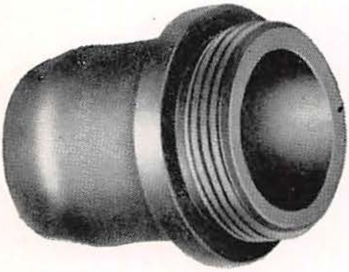
No.			
538-7	Round (1″ dia.).	For use with ¾″	box connector.
538-3	Round (1¼″ dia.).	For use with 1″	box connector.
538-5	Round (1⅝″ dia.).	For use with 1¼″	box connector.
538-4	Round (1⅞″ dia.).	For use with 1½″	box connector.
538-2	Round (2⅜″ dia.).	For use with 2″	box connector.

We also make an **oval form.** In this type the hole required in the box is 4⅛″ long x 1½″ wide.

If there is sufficient demand, we will make special sizes.

SPECIAL OUTLETS FOR BOXES

The Outlets shown can be furnished separately, or can be applied to any of our boxes, as may be specified.

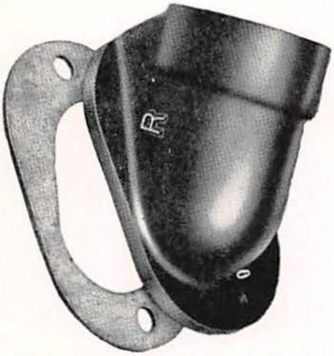


Air Hose Adapters
are made in two sizes

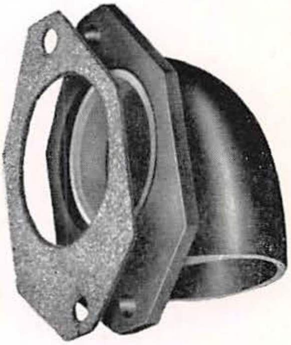
Ordering References

No.	
464-36	for 1½″ (inside dia.) air hose.
464-54	for 1⅞″ (inside dia.) air hose.

Other Outlets



No. 224



No. 446

Ordering References

No.	
446-23	Outlet 2″ dia. (see page 46).
446-24	Outlet Gasket.
224-20	Outlet (right side) 2¼″ dia.
224-21	Outlet (left side) 2¼″ dia.
224-24	Outlet Gasket.

SECTION D

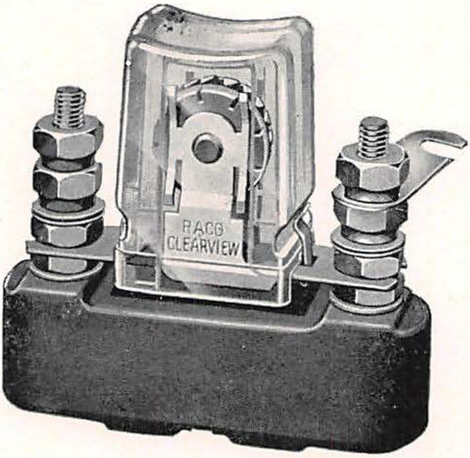
Arresters

Page No.

Raco Clearview Arresters 56-60
Everett Turret Arresters 61
Everett Double Safety Arrester 62
Raco-Everohm Arresters 63
Hystatic Lightning Shunts 64
Raco Telephone Arrester Box 65

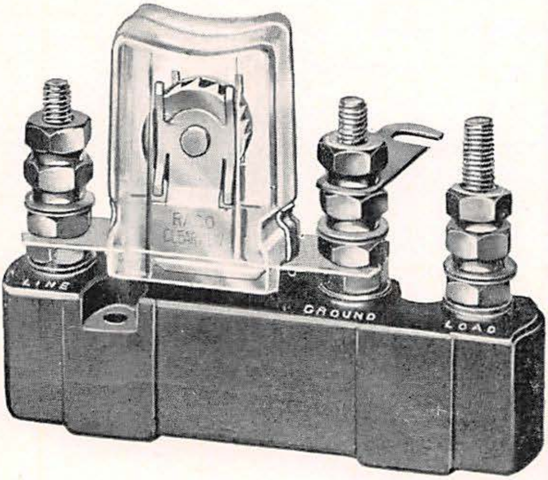
D

RACO CLEARVIEW LIGHTNING ARRESTER


RACO
CLEARVIEW

(Patented)

No. 485-1 without base
No. 485-2 with base


LINE
GROUND
LOAD

No. 485-3

RACO CLEARVIEW LIGHTNING ARRESTER

The Raco Clearview Lightning Arrester has a great factor of safety against improper grounds. It also has an extremely low impulse breakdown. These characteristics are high recommendations for its universal use on all low voltage signal circuits within its AAR rating: 0 to 30 volts, DC and 0 to 125 volts, AC.

The Clearview Arrester may be used on circuits, such as CTC code circuits, up to and including 260 volts, DC, where the current does not exceed 4 amperes, with an ample margin of safety.

Operation

The Raco Clearview Arrester has two air gaps: (1) metal to Everohm block, .005″ to .010″ and (2) metal to metal, .030″ to .040″. The smaller gap provides a low impulse breakover and ionizes the larger gap.

The very high internal resistance of the Everohm block readily passes the small current necessary for ionization of the air between the metal gaps, but its high resistance prevents it from carrying enough current to maintain an arc. The arc, if any, must be between the metal plates, which on account of their design and spacing quickly extinguish it, or burn back to a point where the arc is extinguished due to the gap being widened.

Ordering References

No. 485-1	Raco Clearview Lightning Arrester without base. Dimensions: $1\frac{3}{4}''$ high, $2\frac{3}{8}''$ centers.
No. 485-2	Raco Clearview Lightning Arrester with porcelain base (AAR Terminal Block). Dimensions: $3\frac{3}{8}''$ long, $3\frac{1}{8}''$ high.
No. 485-3	Raco Clearview Lightning Arrester complete with high tensile gray porcelain base with three posts. Dimensions: $4\frac{1}{8}''$ long, 1″ wide, $3\frac{1}{4}''$ high.

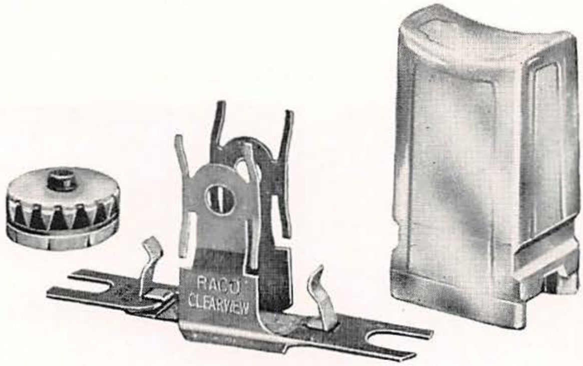
A ground link, with 1″ centers, is furnished with each Arrester; also wood screws with the No. 485-3.

RACO CLEARVIEW LIGHTNING ARRESTER

Important Characteristics

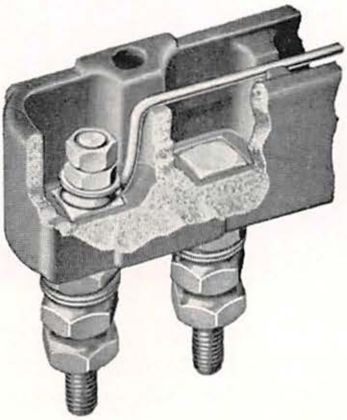
1. It is the safest arrester available against improper grounds.
2. It meets AAR specifications for mechanical design and for every vital operating requirement.
3. It can be used with equal safety and effectiveness to protect all low voltage signal apparatus; as a shunt, a line arrester, or between relays and track.
4. It provides infinity insulation between line and ground.
5. It is very sensitive, its normal impulse breakdown being 1200 to 2000 volts.
6. It has low 60 cycle AC breakdown; 900 to 1000 volts.
7. Its DC breakdown is from 600 to 700 volts.
8. It is extremely fast; has superior volt-time and ampere-time characteristics.
9. Its speed permits the use of 5- or 10-ampere fuses in AC signal circuits without fuses being burned from lightning discharges.
10. Full visible inspection without any dis-assembling is a great convenience.
11. The heavy glass cover is securely locked on, but can be quickly removed, if necessary, for inspection and cleaning.
12. It is fully vented to allow gases formed by discharges to escape.
13. Raco Clearview Arresters can be banked on parallel 1″ centers without fear of crossing with circuit in adjacent arresters.
14. Raco Clearview Arresters may be used as a telephone line arrester.

RACO CLEARVIEW LIGHTNING ARRESTER



Ordering References
Replacement Parts

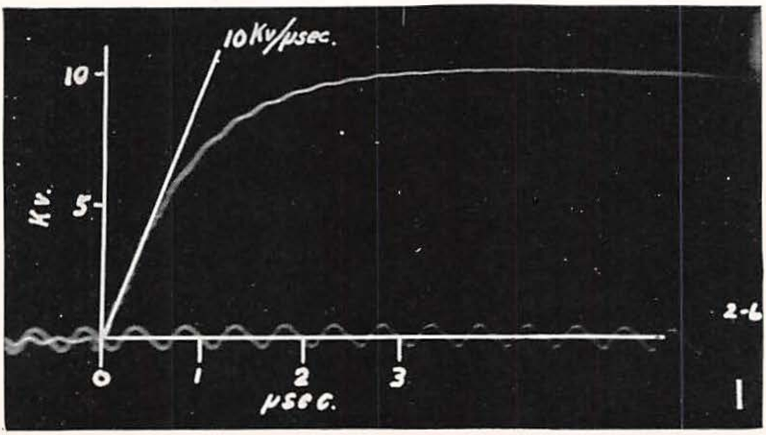
No. 485-20	Clear glass cover.
No. 485-21	Discharge block unit assembly.
No. 485-22	Mounting clip unit assembly.
No. 485-23	Porcelain base only for No. 485-3 Arrester (complete with 3 posts, nuts, washers, connectors and wood screws).



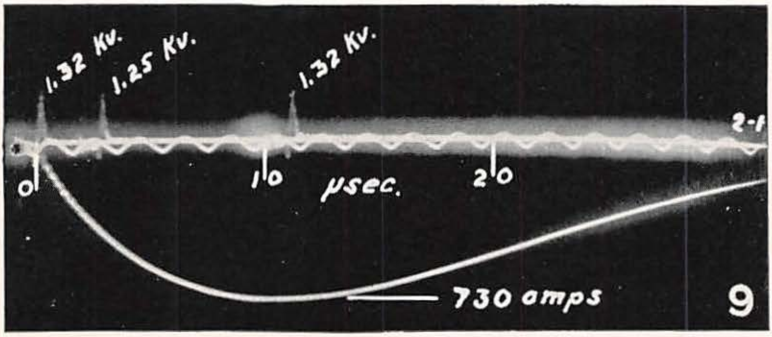
No. 485-3 Jumper Connection

RACO CLEARVIEW LIGHTNING ARRESTER

The following oscillograms were made by a leading independent laboratory.



No. 1. The surge generator constants were adjusted to provide the proper average voltage rise of 10 Kv. per microsecond and an impulse current of the desired magnitude and wave shape.

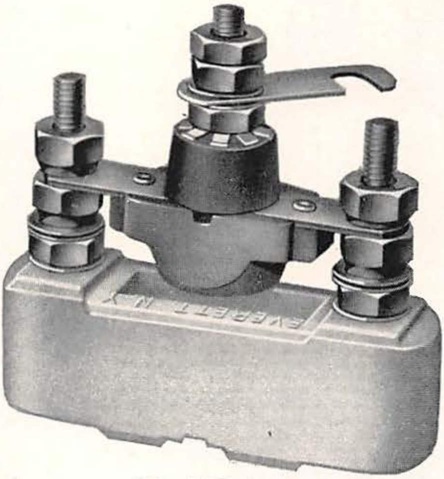


No. 9. The breakdown and time in microseconds required to extinguish the arc. Also the current rise to a crest of 730 amperes in 10 microseconds. The three breakdown voltages shown are three different Clearview Arresters, taken on the same film.

EVERETT TURRET LIGHTNING ARRESTERS

Everett Turret Arresters are recommended for low voltage signal circuits; 0 to 30 volts, DC and 0 to 125 volts, AC.

A uniform 60-cycle, AC, breakdown at 1200 to 1400 volts is assured.



No. 502-1

Ordering References

No. 502

Arrester unit only—without porcelain base.

No. 502-1

Arrester complete with porcelain base. (AAR Terminal Block)

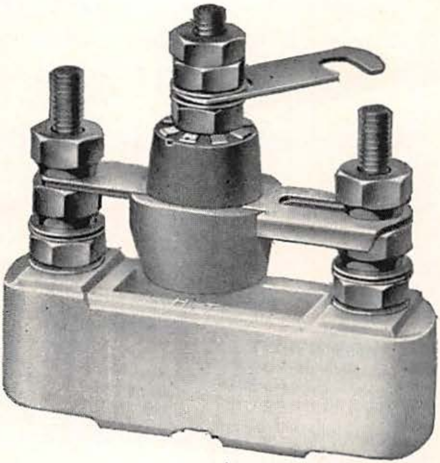
Ordering References

No. 510

Arrester unit only—without porcelain base.

No. 510-1

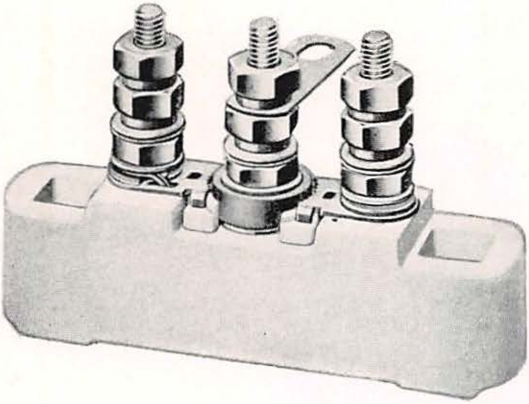
Arrester complete with porcelain base. (AAR Terminal Block)



No. 510-1

A ground link, with 1″ centers, is furnished with each Arrester.

EVERETT DOUBLE SAFETY LIGHTNING ARRESTER



Everett Double Safety Lightning Arresters are used for low voltage signal circuits: 0 to 30 volts, DC and 0 to 125 volts, AC.

A uniform 60-cycle, AC breakdown at 1100 to 1300 volts is assured.

It has both Everohm block and air gap. The pole pieces are fixed to insulating spacers so as to maintain a very fine air gap.

Impedance coil connections to the binding posts are made on top of the block where they can be readily inspected if necessary. A straight jumper can be provided when specified.

Dimensions: length 4⅛″, width 1″, height 2¾″.

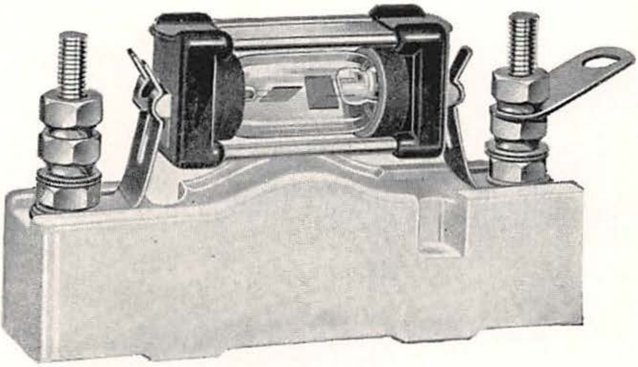
Ordering References

No. 300-5	Arrester complete with impedance coil in base (for one circuit).
No. 301-5	Arrester complete without impedance coil (for connecting to both sides of circuit).

A ground link, with 1″ centers, is furnished with each arrester; also wood screws.

Everett Multipath Lightning Arrester, Type "W" (No. 800), and **Type "R" Lightning Arrester, No. 300-6** and **301-6,** can be furnished.

RACO-EVEROHM LIGHTNING ARRESTERS



No. 1001

The Raco Everohm Lightning Arresters are efficient and reliable gas tube types of lightning arresters for low voltage signal circuits: 0 to 30 volts, DC and 0 to 125 volts, AC.

It is made in 2-post and 3-post types.

The method of mounting leaves the tube visible but amply protected. The ends of the tube are rubber cushioned lengthwise and crosswise, taking all strain off the lead wires.

Ordering References

No. 1001 Raco Everohm Lightning Arrester (2-post) complete with gas tube.

Dimensions: 2⅝″ high, 5-1/16″ long, 1-1/16″ wide.

No. 1004 Raco Everohm Lightning Arrester (3-post) complete with gas tube.

Dimensions: 2¾″ high, 6-1/16″ long, 1-1/16″ wide.

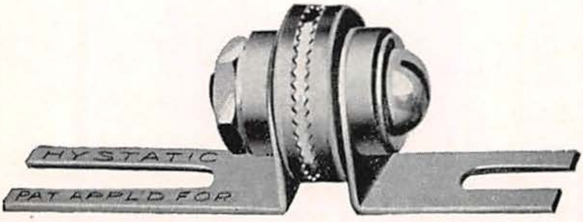
No. 999 Raco Everohm Lightning Arrester Gas Tube Assembly only (specify High Breakdown or Low Breakdown).

High Breakdown (formerly known at EO 600) from 475 to 775 volts at 60 cycles AC. This has black rubber cushions at ends of gas tube.

Low Breakdown—from 200 to 400 volts at 60 cycles AC. This has red rubber cushions at ends of gas tube.

A ground link, with 1″ centers, is furnished with each arrester; also wood screws.

HYSTATIC LIGHTNING SHUNTS

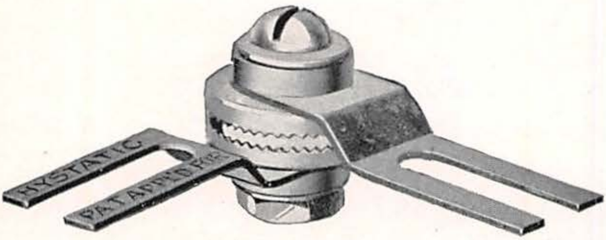


No. 560-A

Hystatic Lightning Shunts are equipped with Everohm blocks and saw-tooth caps. They protect relays and other instruments by shunting lightning across the terminal posts of the coils.

Ordering Reference

The No. 560-A Hystatic Shunt fits binding posts from 1¾″ to 2⅜″ apart.

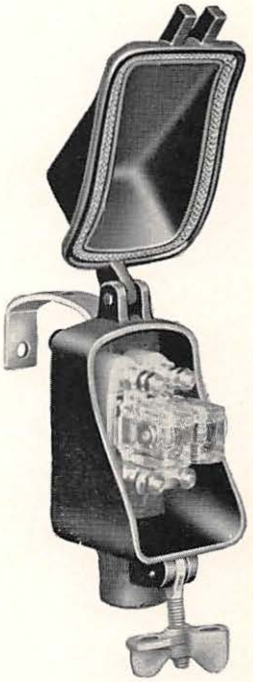


No. 560-B

Ordering Reference

The No. 560-B Hystatic Shunt has the great convenience of being adjustable for a large variation in spacing of binding posts.

RACO TELEPHONE ARRESTER BOX



We designed this Clearview Lightning Arrester Box, as illustrated, for use in telephone work.

The substantial steel strap hooks the box firmly onto the crossarm. Furthermore, holes are provided in the top and side of this strap to secure the box in position.

The wires are carried through a washer in the pothead and the box can then be sealed with compound.

Ordering References

569-1 Raco Telephone Arrester Box only.

569-2 Raco Telephone Arrester Box with two No. 485-2 Clearview Lightning Arresters (page 56).

Dimensions: 4-15/16″ long, 3¼″ wide, 3-7/16″ deep.

Approximate net weight: 7 lbs.

SECTION E

Resistors, etc.

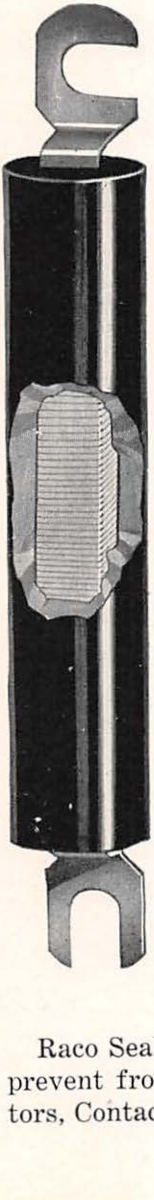
Page No.
Raco Sealed Resistors 68-72
Raco Sealed Resistors—Tap Type 73-75
Everett Adjustable Resistance Units 76-81
Everett Triple Contact Resistance Test Slides 82
Raco Knife Switch 83
Raco Strap Key 83
Raco Track Model Lamp Receptacles 84-85
Raco Disconnect Switches 86-89
Raco Screw Base Receptacle 90
Raco Indicating Lamp Holder 90
Raco Power-Off Indicator 91

RACO SEALED RESISTORS

Raco Sealed Resistors meet AAR specifications.

The resistance wire is wound on a porcelain core to which the monel metal terminal lugs are attached.

A tight and permanent contact is assured by fastening the resistance wire to the terminal lugs with screws.



This unit is embedded in a thick wall of artificial insulating stone, contained inside a sheet steel casing.

The artificial stone is imperishable, hard, and of extremely high dielectric and mechanical strength. It withstands a temperature of 800 degrees F. without injury.

Two coats of G. E. Glyptal are baked on for 90 min. at approximately 210 degrees F. This is extremely effective in keeping moisture from penetrating the unit.

The resistance and amperage of each unit is plainly stamped on the metal sheathing.

Maximum Resistance

To insure against failure under continuous load, maximum recommended resistances are given. No. 44 A.W.G. wire, which is the minimum size allowed by AAR specification, is used to obtain maximum resistances. Larger wire sizes are used for lower resistances.

Tolerances

The tolerances permitted in the rated resistances of Raco Sealed Resistors are as follows:

Less than 50 ohms, 5% above or below rated resistance. 50 ohms or more, 10% above or below rated resistance. If closer tolerances are required orders should so specify.

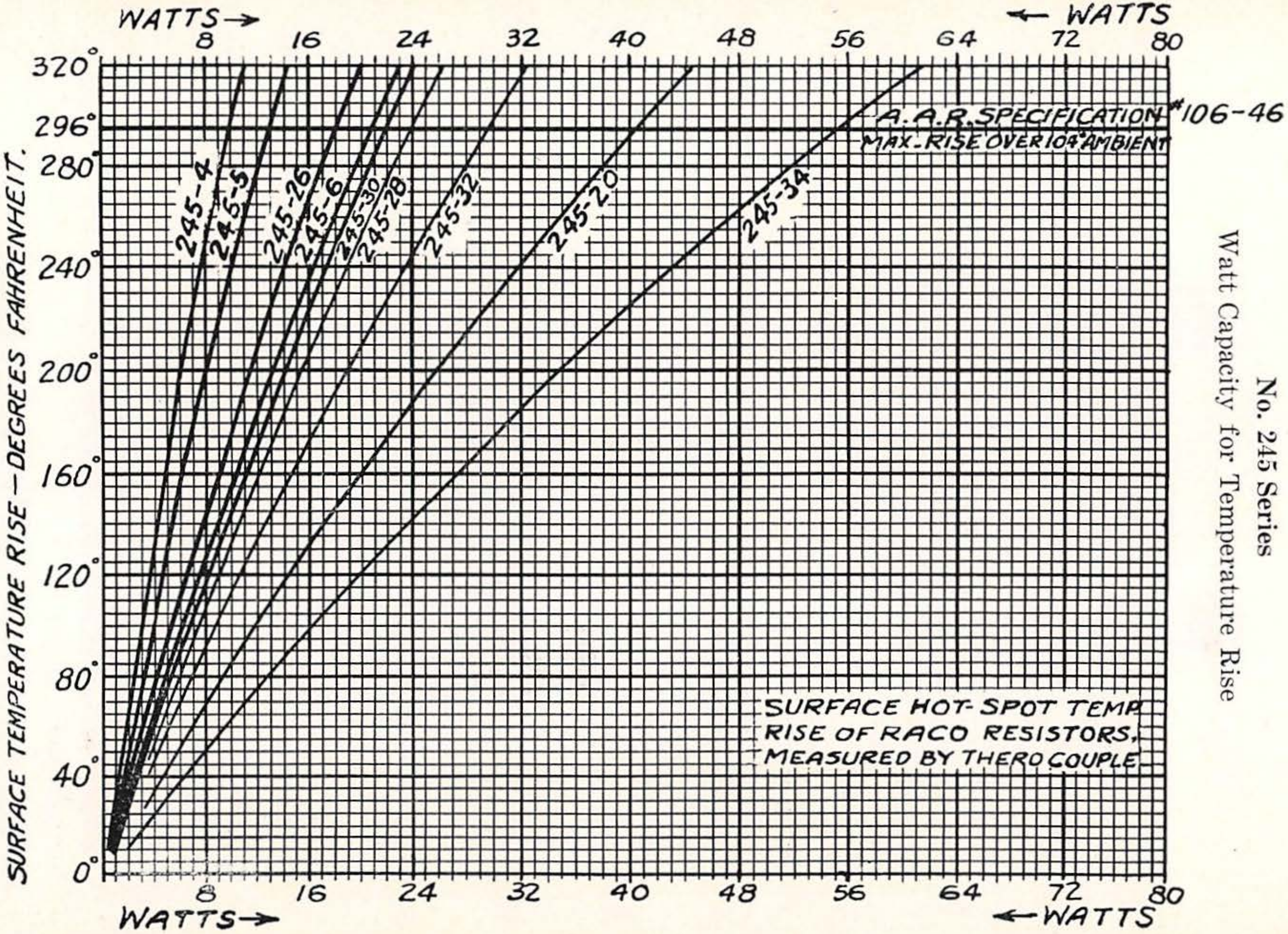
HEATING UNITS

Raco Sealed Resistors are used extensively as Heating Units, to prevent frosting accumulations at vital points, such as Commutators, Contacts, etc.

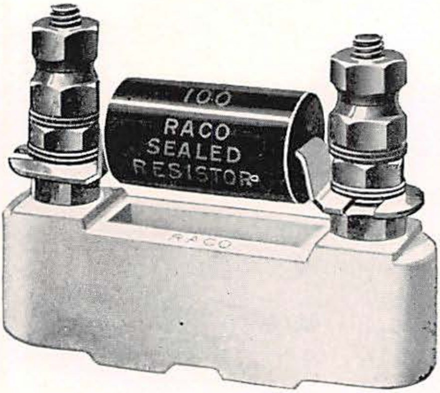
RACO SEALED RESISTORS

No. 245 Series

Watt Capacity for Temperature Rise



RACO SEALED RESISTORS


100
RACO
SEALED
RESISTOR
RACO

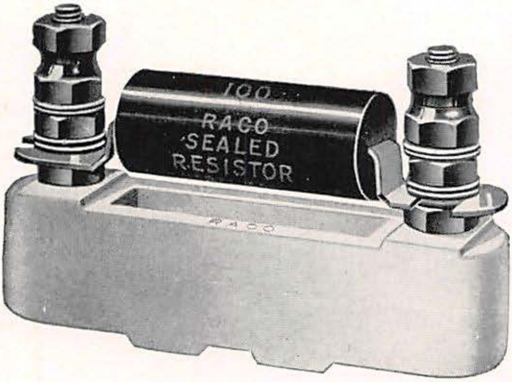
	Complete	Base	Resistor
Ordering Reference	245-1	105615	245-4

Over-all size of porcelain block: 1″ wide, 3⅜″ long.

Distance between binding post centers: 2⅜″.

AAR rating in watts: 10.

Maximum recommended resistance: 2750 ohms.


100
RACO
SEALED
RESISTOR
RACO

	Complete	Base	Resistor
Ordering Reference	245-2	217-5	245-5

Over-all size of porcelain block: 1″ wide, 4″ long.

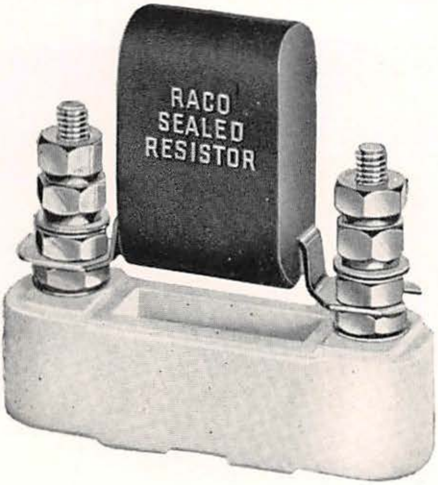
Distance between binding post centers: 3″.

AAR rating in watts: 13.

Maximum recommended resistance: 5500.

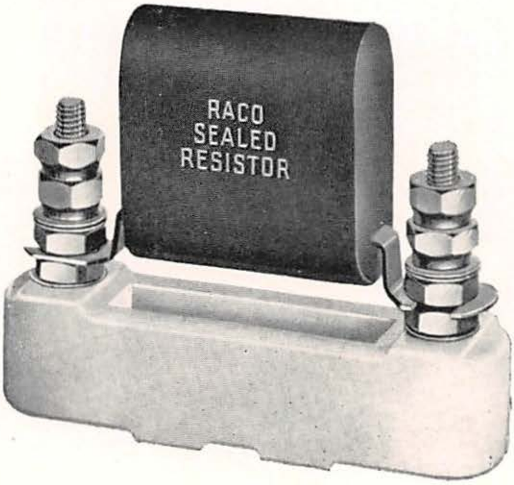
Please order by number and specify resistance

RACO SEALED RESISTORS



	Complete	Base	Resistor	Height Over-all	AAR rating in watts	Maximum resistance
Ordering Reference	245-25	105615	245-26	3⅜″	18	5000
Ordering Reference	245-27	105615	245-28	4¼″	24	6750

Over-all size of porcelain block: 1″ wide, 3⅜″ long.
Distance between binding post centers: 2⅜″.

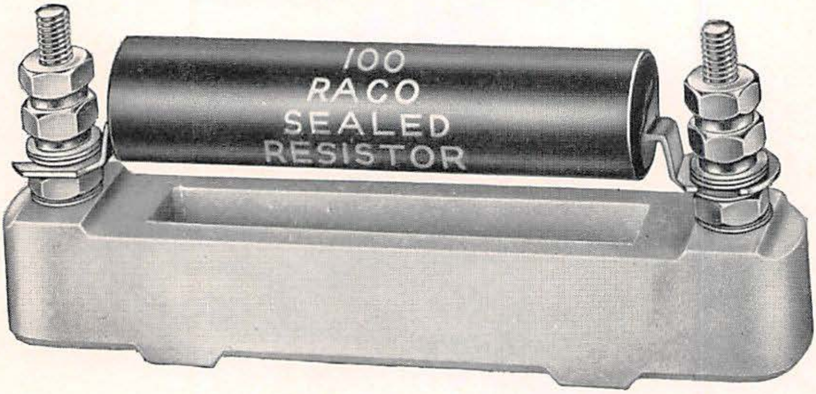


	Complete	Base	Resistor	Height Over-all	AAR rating in watts	Maximum resistance
Ordering Reference	245-29	217-5	245-30	3⅜″	22	10,000
Ordering Reference	245-31	217-5	245-32	4¼″	30	13,500

Over-all size of porcelain block: 1″ wide, 4″ long.
Distance between binding post centers: 3″.

Please order by number and specify resistance

RACO SEALED RESISTORS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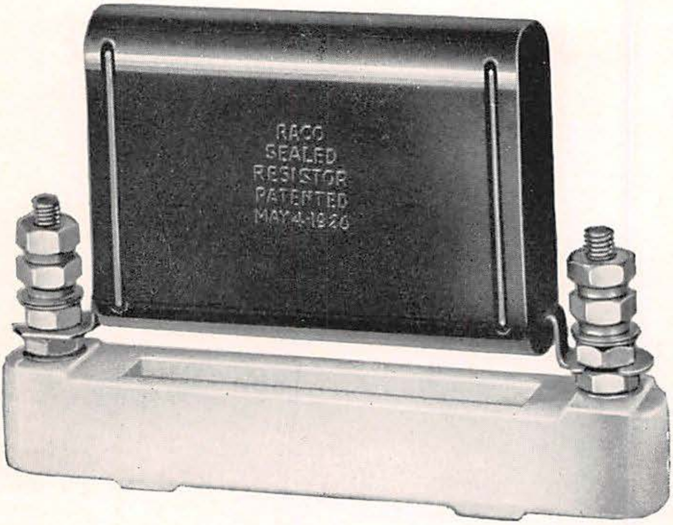
RACO
SEALED
RESISTOR

	Complete	Base	Resistor
Ordering Reference	245-3	217-3	245-6

Over-all size of porcelain block: 1″ wide, 6⅛″ long.
Distance between binding post centers: 5⅛″.
AAR rating in watts: 21.
Maximum recommended resistance: 15,000 ohms.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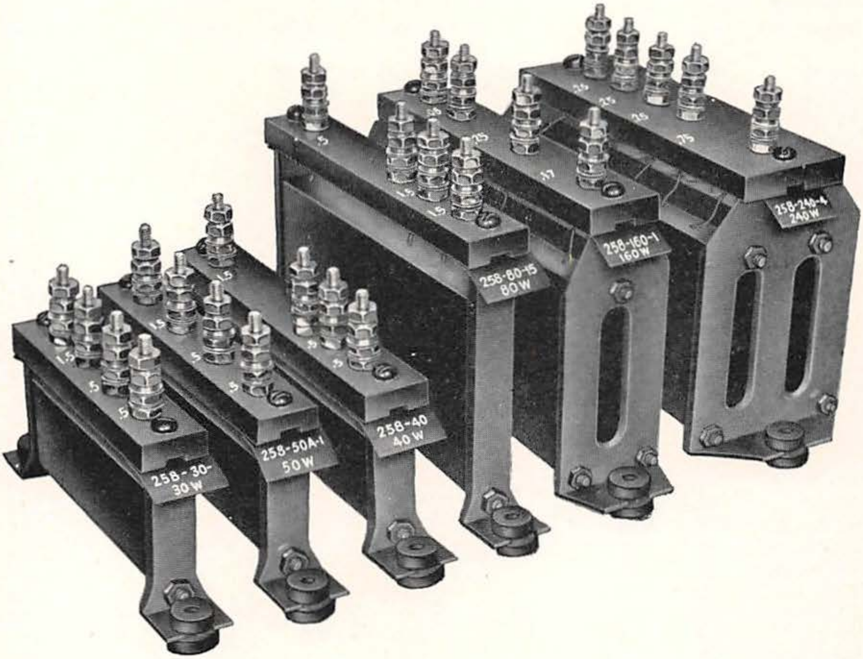
SEALED
RESISTOR
PATENTED
MAY 4-1926

	Complete	Base	Resistor	Height Over-all	AAR rating in watts	Maximum resistance in ohms
Ordering Reference	245-21	217-3	245-20	4¼″	27	35,000
Ordering Reference	245-33	217-3	245-34	6¼″	40	50,000

Over-all size of porcelain block: 1″ wide, 6⅛″ long.
Distance between binding post centers: 5⅛″.

Please order by number and specify resistance.

RACO SEALED RESISTORS — TAP TYPE


258-30-
30 W
258-50A-1
50 W
258-40
40 W
258-80-15
80 W
258-160-1
160 W
258-240-4
240 W

Number	Overall Length	Overall Height	Overall Width	Hole Centers For Mounting
258-30	8-1/16″	5″	1¼″	7-1/16″
258-40	10-1/16″	5″	1¼″	9-1/16″
258-50	9-1/16″	5″	1¼″	8-1/16″
258-80	10-1/16″	7¼″	1¼″	9-1/16″
258-160	9⅞″	7½″	2-11/32″	8⅞″
258-240	9⅞″	7½″	2-27/32″	8⅞″

Resistance of each section is plainly stamped on top between binding posts.

(See Ordering References on the following pages).

RACO SEALED RESISTORS—TAP TYPE

Ordering References	Max. Watts	Total Resist. Ohms	Resistance of Sections — Ohms					Continuous current carrying capacity in Amperes
258-30-1	30	.4	.1	.25	.05			8.65
258-30-2	30	.5	.3	.1	.1			7.75
258-30-3	30	1	.5	.25	.25			5.48
258-30-4	30	3	1	1.5	.5			3.16
258-30-5	30	5	1.67	2.50	.83			2.45
258-30-6	30	5						2.45
258-30-7	30	6	2	3	1			2.24
258-30-8	30	8	1.33	4	2.67			1.94
258-30-9	30	20	5	5	10			1.23
258-30-10	30	25						1.09
258-30-11	30	25	4	13	8			1.09
258-30-12	30	60	10	30	20			.707
258-30-13	30	85						.595
258-30-14	30	85	65	20				.595
258-30-15	30	100						.548
258-30-16	30	125						.49
258-30-17	30	200						.388
258-30-18	30	300	100	200				.316
258-30-19	30	300	150	50	100			.316
258-30-20	30	300	125	175				.316
258-30-21	30	400						.274
258-30-22	30	500						.245
258-30-23	30	600						.224
258-30-24	30	1800						.129
258-30-25	30	2500	500	1750	250			.109
258-30-26	30	3500	500	3000				.092
258-30-27	30	1500	250	250	1000			.1
258-30-28	30	5000						.077
258-30-29	30	3	.2	.4	.8	1.6		3.16
258-30-30	30	1	.1	.4	.2	.3		5.47
258-30-B1	30	4000	1000	3000	(flexible taps)			.55
258-30-31	30	5	1	1	3			2.449
258-40-1	40	.5	.17	.25	.08			8.95
258-40-2	40	1	.25	.25	.25	.25		6.33
258-40-3	40	1						6.33
258-40-4	40	1.5	.5	.75	.25			5.15
258-40-5	40	3.5	.75	2.25	.25	.25		3.38
258-40-6	40	5						2.83
258-40-7	40	5	1.5	2.5	.5	.5		2.83
258-40-8	40	1000	250	250	250	250		.2
258-40-9	40	3000	2000	250	250	250	250	.115
258-40-10	40	3250	250	250	250	250	2250	.111
258-40-11	40	6000	1000	500	500	4000		.082
258-40-12	40	6000	500	500	500	500	4000	.082
258-40-13	40	8000	500	500	500	500	6000	.071
258-40-14	40	9750	250	2000	2500	5000		.064
258-40-15	40	1550	50	100	200	400	800	.16
258-40-16	40	2.5	1.5	.5	.5			4
258-50-A1	50	8	1.5	1.5	5			2.5
258-50-A2	50	2.5	1.5	.5	.5			4.4
258-80-1	80	.5	.08	.25	.17			12.65
258-80-2	80	1	.25	.25	.25	.25		8.95
258-80-3	80	1	.17	.5	.33			8.95
258-80-4	80	1.5	.25	.75	.50			7.3
250-80-5	80	2	.75	.25	.75	.25		6.33
250-80-6	80	2	.67	1.00	.33			6.33

RACO SEALED RESISTORS—TAP TYPE

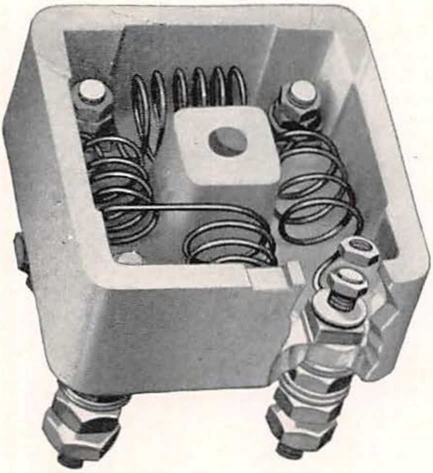
Ordering References	Max. Watts	Total Resist. Ohms	Resistance of Sections — Ohms					Continuous current carrying capacity in Amperes
258-80-7	80	2.5	1.5	.5	.5			5.65
258-80-8	80	2.5	.83	1.27	.4			5.65
258-80-9	80	2.5	.42	.38	.45	1.25		5.65
258-80-10	80	3	1	1.5	.5			5.15
258-80-11	80	5	1.67	2.5	.83			4
258-80-12	80	5						4
258-80-13	80	5	1.7	2.4	.9			4
258-80-14	80	8	1.6	1.6	4.8			3.16
250-80-15	80	8	5	1.5	1.5			3.16
258-80-16	80	10	1.7	3.3	5			2.83
258-80-17	80	45						1.33
258-80-18	80	75	5	10	20	40		1.03
258-80-19	80	100						.895
258-80-20	80	300						.515
258-80-21	80	475	50	400	25			.41
258-80-22	80	2000						.2
258-80-23	80	4000						.141
258-80-24	80	7000						.107
258-80-25	80	25000	2500	17500	5000			.056
258-80-26	80	4	1.0	1.0	2.0			4
258-80-27	80	150	10	15	25	50	50	.73
258-80-28	80	100	20	60	20			.894
258-160-1	160	.5	.08	.25	.17			17.9
258-160-2	160	1	.1	.7	.2			12.65
258-160-3	160	1	.11	.33	.33	.22		12.65
258-160-4	160	1	.17	.5	.33			12.65
258-160-5	160	1.5	.25	.75	.50			10.34
258-160-6	160	1.5	.25	.50	.75			10.34
258-160-7	160	2.5	.84	1.24	.42			8
258-160-8	160	3	1	1.5	.5			7.3
258-160-9	160	5	1.67	2.5	.83			5.65
258-160-10	160	5						5.65
258-160-11	160	50						1.79
258-160-12	160	2	.67	1	.33			8.95
258-240-1	240	.5	.17	.25	.08			21.9
258-240-2	240	1	.17	.5	.33			15.5
258-240-3	240	1.5	.5	.75	.25			12.65
258-240-4	240	1.5	.25	.25	.25	.75		12.65
258-240-5	240	2	.25	.75	.5	.5		10.97
258-240-6	240	2	.33	1	.67			10.97
258-240-7	240	2.5	.83	1.27	.4			9.8
258-240-8	240	3.75	1	1.25	1.5			8
258-240-9	240	4.5	.5	1.25	.5	2.25		7.3
258-240-10	240	4.5	.5	1	.75	2.25		7.3
258-240-11	240	5						6.93
258-240-12	240	5	1.7	2.4	.9			6.93
258-240-13	240	5	1.67	2.5	.83			6.93
258-240-14	240	5.5	1	1.5	3			6.6
258-240-15	240	50	5	35	10			2.19
258-240-16	240	1900	1600	100	100	100		.355
258-240-17	240	3.5	.5	1.25	1.75			8.28
258-240-18	240	4.5	.75	1.50	2.25			7.302
258-240-19	240	375						.8
258-300-1	300	300						1
258-405-1	405	30						3.67

EVERETT ADJUSTABLE RESISTANCE UNITS

The resistance wire used in Everett Resistance Units is the highest grade obtainable. It has the highest carrying capacity, is less subject to burnouts, and is actually non-corrosive.

Resistance wire connections are made to the binding posts without cutting the wire.

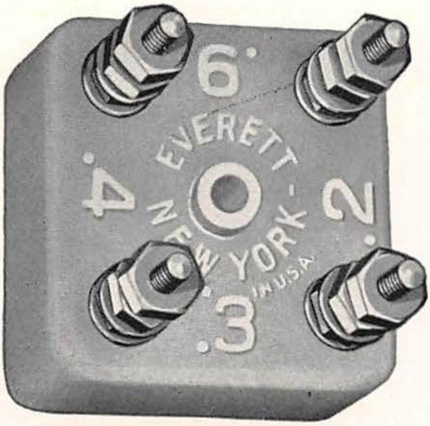
By allowing somewhat more room for the wire and forming it in helical coils a more uniform spacing is obtained for cooling, and burnouts are reduced to the minimum.



The above illustration shows the bottom view and the method of attaching the resistance wire to the binding posts. The posts are threaded a distance below their heads sufficient for connecting the resistance wire. The contact is made between the head of the binding post and the nut; thus a loose binding post will not cause a loose connection of the resistance wire.

This type of binding post is used in all Resistance Units where connections are made underneath.

EVERETT ADJUSTABLE RESISTANCE UNITS



Regularly furnished with total resistances of .9 and 1.9 ohms.

Dimensions: 2-9/16″ square, 2½″ high.

Wood screw and directions for installing and selecting the various resistances are furnished.

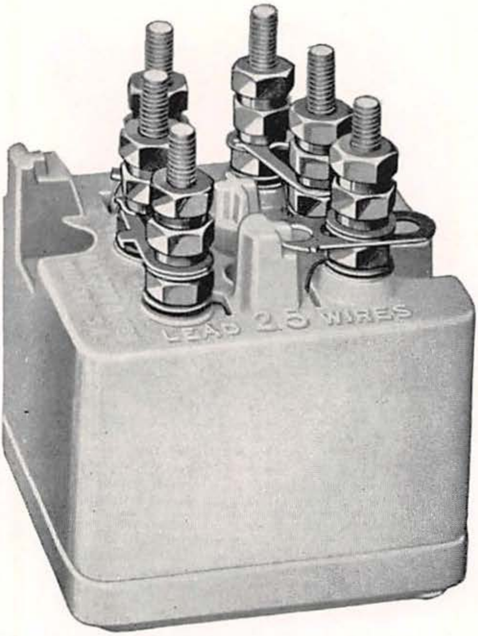
Base is filled with compound.

Ordering References

No. 805 Everett Adjustable Resistance Unit with total resistance of .9 ohm. AAR rating in watts: 7.

No. 806 Everett Adjustable Resistance Unit with total resistance of 1.9 ohms. AAR rating in watts: 7.

EVERETT ADJUSTABLE RESISTANCE UNITS



Any resistance, in .1 ohm steps, up to 2.5 ohms, can be obtained by simply adjusting the connecting strips.

The sum of the open coils is the resistance cut in.

This unit is enclosed by a porcelain bottom plate.

AAR rating in watts (not compounded): 17.

Dimensions: 3-1/16″ x 3⅜″, 4-3/16″ high.

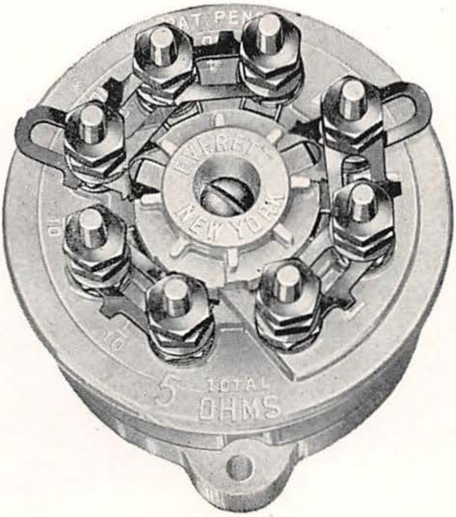
Wood screws are furnished.

Ordering Reference

No. 808 Everett Adjustable Resistance Unit, 2.5 ohms.

In addition to resistance values shown, finer adjustment may be obtained by the use of wire jumpers, between posts, to place coils in multiple.

EVERETT ADJUSTABLE RESISTANCE UNITS



Any resistance in .1 ohm steps, up to 5 ohms, can be obtained by adjusting the connecting strips.

The sum of the open coils is the resistance cut in.

The helical coils are insulated from one another by heavy mica partitions.

Connecting strips of open coils are locked in the open position.

The resistance can be changed without breaking the circuit.

This unit is enclosed by a porcelain bottom plate.

Dimensions: 4-5/16″ diameter, 4¾″ high.

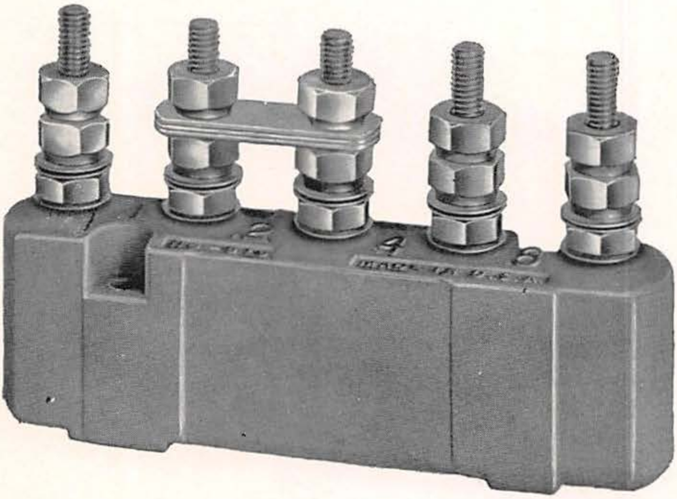
Wood screws are furnished.

Ordering References

		AAR Rating in Watts
No. 807-1	Everett Adjustable Resistance Unit, 5 ohms.	16
No. 807-2	Everett Adjustable Resistance Unit, 10 ohms.	16
No. 807-5	Everett Adjustable Resistance Unit, 18.5 ohms.	16

In addition to resistance values shown, finer adjustment may be obtained by the use of wire jumpers, between posts, to place coils in multiple.

EVERETT ADJUSTABLE RESISTANCE UNITS



The sum of the open coils is the resistance cut in.

Dimensions: 1″ wide, 5″ long, 3-1/16″ high.

Wood screws are furnished.

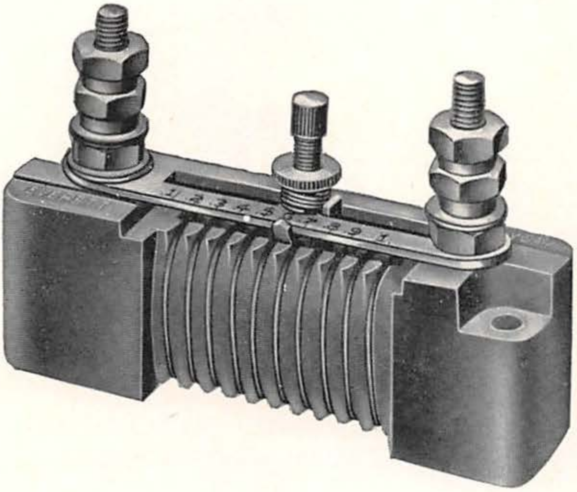
Ordering References

Number	Total Resistance in Ohms	Steps in Ohms				AAR Rating in Watts	
810	15	3	3	4	5	8	Compounded
810-1	1.5	.1	.2	.4	.8	10	Not compounded
810-2	1.5	.1	.2	.4	.8	8	Compounded
810-3	2	.2	.3	.5	1.0	8	Compounded
810-4	2.4	.2	.4	.6	1.2	8	Compounded
810-4A	2.4	.2	.4	.8	1.0	8	Compounded
810-5	4	1	1	1	1	10	Not compounded
810-6	8	2	2	2	2	10	Not compounded
810-7	10	1	2	3	4	10	Not compounded
810-8	21	3	5	6	7	8	Compounded

We can make the above units in other resistance values if desired.

In addition to resistance values shown, finer adjustment may be obtained by the use of wire jumpers, between posts, to place coils in multiple.

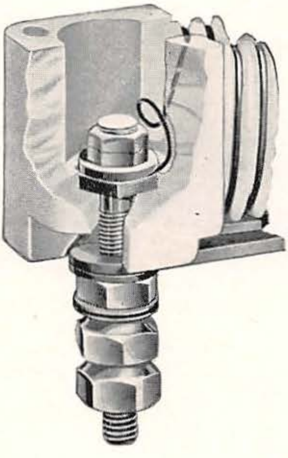
EVERETT ADJUSTABLE RESISTANCE UNITS



Furnished with any of the following total resistances: 1, 1.5, 2, 3, 4, 5, and 10 ohms, each resistance being divided into 10 steps.

A spring holds the locknut assembly firmly in position.

AAR rating in watts: 7.



Non-corroding Hi-tensile contact screw.

The resistance wire is not bound against the porcelain and loosening of binding post jam nut will not cause a loose connection of resistance wire.

Dimensions: 5-3/16″ long, 1-1/16″ wide, 2¾″ high.

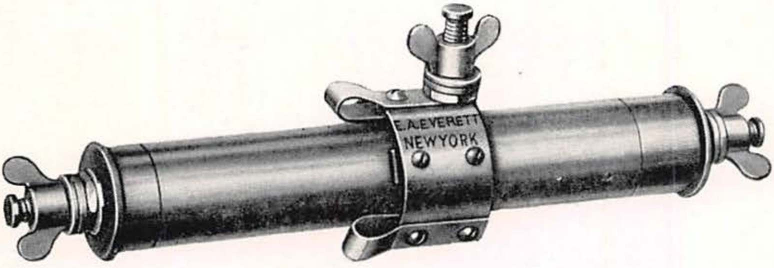
Wood screws are furnished.

Ordering Reference

No. 809 Everett Slide Resistance Unit.
Specify total resistance required.

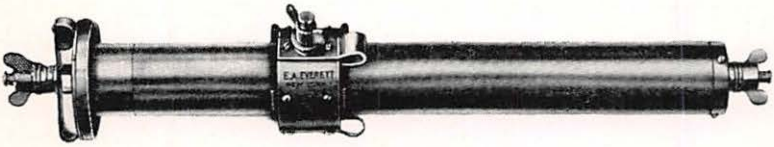
EVERETT TRIPLE CONTACT RESISTANCE TEST SLIDES

(For low voltage only)



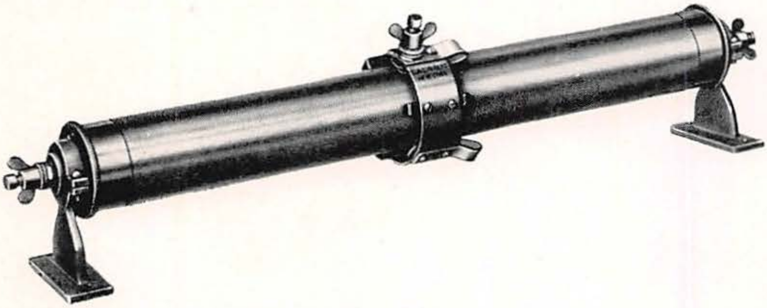
No. 815

Resistance: 0 to 80 ohms. Capacity for testing purposes, 1¼ to 1¾ amperes (not the continuous carrying capacity). Length: 8″.



No. 816

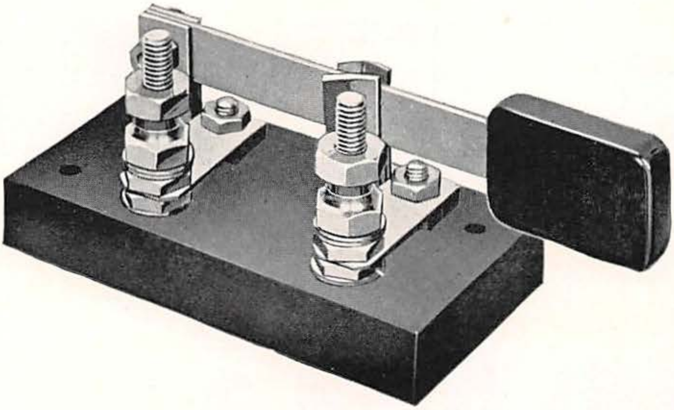
Resistance: 0 to 300 ohms. Capacity for testing purposes, 1½ to 1¾ amperes (not the continuous carrying capacity). Length: 15″.



No. 817

Resistance: 0 to 100 ohms. Capacity for testing purposes, 2¼ to 2¾ amperes (not the continuous carrying capacity). Length: 18″.

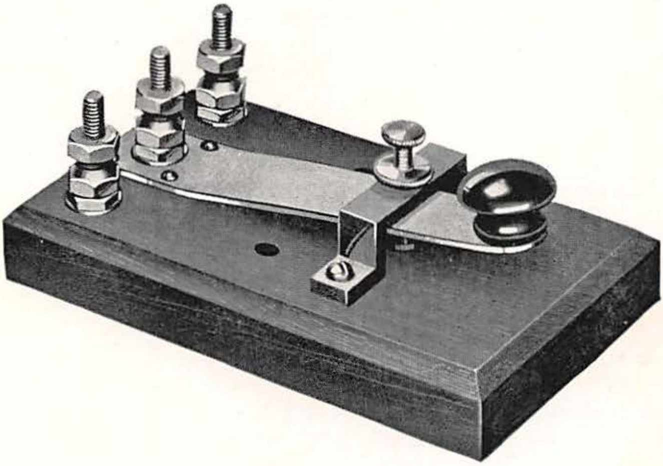
No. 160 RACO KNIFE SWITCH



Made to stand the use and abuse of railroad service. Rating 30 amps., 250 volts, AC.

Dimensions: 2″ wide, 5½″ long overall (4″ base only), 2⅛″ high.

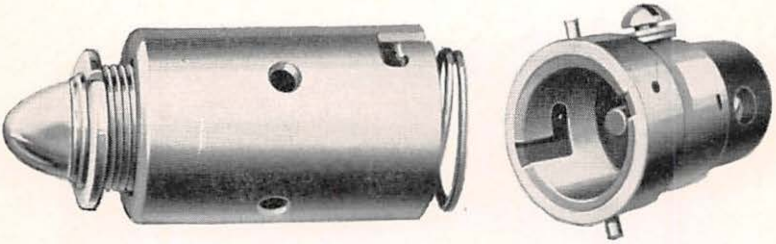
No. 177 RACO STRAP KEY



Hardwood base—heavy contact spring with silver contacts. Can be used for open or closed circuit, or both.

Dimensions: 3⅜″ wide, 5½″ long, 2″ high.

RACO TRACK MODEL LAMP RECEPTACLES



The Raco Track Model Lamp Receptacle is designed to insure maximum light efficiency. It is fabricated from brass, nickle-plated and furnished to fit various thicknesses of model boards. Either single or double contact bayonet, miniature or candelabra screw bases are supplied.

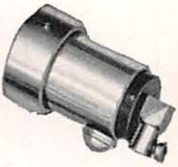
715A

716A

Bases

717A

717B



715B

Adapters

718-1

718-2

Ordering References

Number	Receptacle Shell	Base No.	Contact	With Adapter No.	Type Socket	Length
715-1	Short	715A	Single	None	Bayonet	2-11/16″
715-2	Short	715B	Single	None	Bayonet	2¾″
716-1	Short	716A	Double	None	Bayonet	2⅞″
716-2	Short	717B	Single	None	Min. Sc.	2-9/16″
716-3	Short	717A	Single	None	Can. Sc.	2-9/16″
717-1	Long	716A	Double	718-1	Min. Sc.	3-5/16″
717-3	Long	716A	Double	718-2	Can. Sc.	3-5/16″
717-4	Long	717A	Single	None	Can. Sc.	3-1/16″
719-1	Long	715A	Single	None	Bayonet	3⅛″
719-2	Long	716A	Double	None	Bayonet	3¼″
718-1	Adapter (Converts double contact Bayonet Base to Min. Sc. Base.)					
718-2	Adapter (Converts double contact Bayonet Base to Can. Sc. Base.)					
720	Plastic Jewel Assm. (Jewel, Lens Retainer, Note No. 4.)					
723	Lucite Jewel Assm. (Jewel, Lens Retainer, Note No. 4.)					

NOTES:

1—Length (see table), is overall length of receptacle from back of Model Board.

2—Panel drilling for all receptacles is 11/16″.

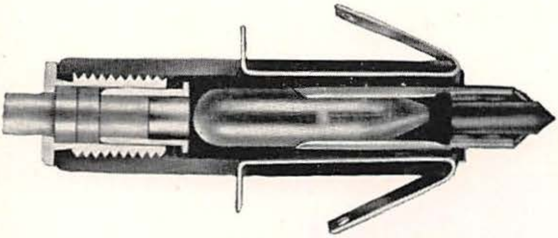
3—All receptacles can be installed on 1¼″ centers.

4—When ordering Jewel Assemblies No. 720 or No. 723, specify color of jewel required (opal, red, green, amber or blue). Screw caps are fabricated for ¼″ Model Boards and are not furnished as part of the Jewel Assembly unless otherwise specified.

5—Receptacles are designed for use with G6 bulbs (AAR Plan 1541A). Bulbs are not furnished as part of Raco Receptacles.

6—Bulbs are renewed from back of Model Board.

No. 504 RACO MINIATURE TRACK MODEL LAMP

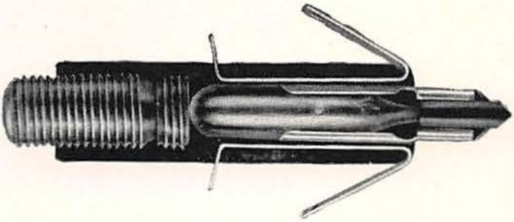


No. 504-1

Raco Miniature Track Model Lamp Receptacles are fabricated from fiber and copper based alloys. They are double contact sockets, furnished to fit various thicknesses of model boards, up to ¼″.

The overall length of the No. 504-1 and No. 504-2, measured from the back face of the model board including the lamp bulb, is 2″ and 2$\frac{3}{16}$″ respectively.

The lens discs are furnished in red, blue, green, amber and white.



No. 504-2

Ordering References

No. 504-1 Raco Miniature Track Model Lamp Receptacle.

No. 504-2 Raco Miniature Track Model Lamp Receptacle.

NOTES:

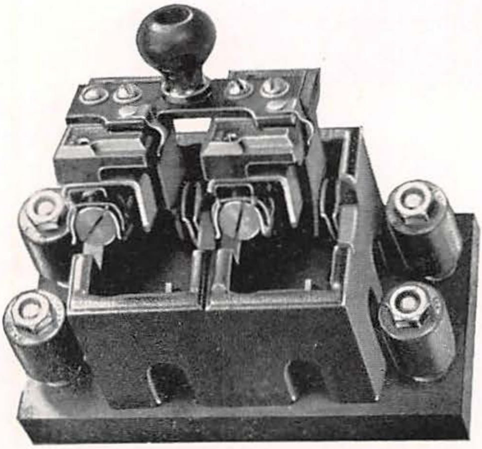
1—Orders must specify the color of the lens to be furnished in receptacle.

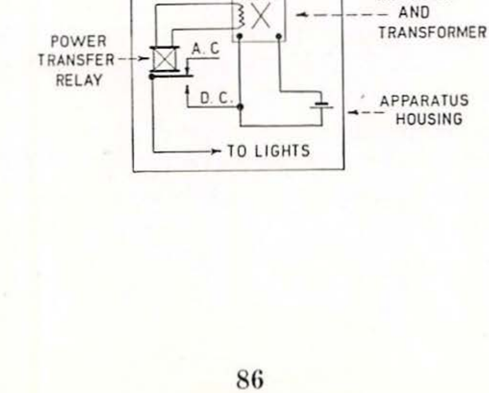
2—The model board holes for all receptacles are to be tapped ⅜-24 NF 2 thread. The outside diameter of the shell is ½″.

3—Receptacles are designed to use either the SL-1 or SL-2 bulbs (AAR plan 1542A). The bulbs are not furnished as part of Raco Receptacles.

4—Bulbs are renewed from back of model boards.

RACO DISCONNECT SWITCH




POWER LINE
←110 OR 220-V.-A.C.
RACO POWER OFF INDICATOR
RACO DISCONNECT SWITCH
RECTIFIER AND TRANSFORMER
POWER TRANSFER RELAY
A.C
D.C.
APPARATUS HOUSING
TO LIGHTS

RACO DISCONNECT SWITCH

The Raco No. 324 Disconnect Switch is designed for use with trickle-charge signal systems. Used as an entrance switch, located in the apparatus housing, it provides a dependable and safe fused cut-out between primary circuit and rectifier. It replaces unsatisfactory porcelain cut-out, fuse plugs, and non-dependable switches.

It provides a quick and easy means for testing rectifiers and power transfer relays.

SAFE

All circuits are dead when fuses are replaced or renewed.

There are no exposed current carrying parts when switch is closed.

It takes standard 250 volt, 30 ampere fuses (2″ long, with ferrules 9/16″ in diameter).

DEPENDABLE

Molded parts are of best composition, having high heat resisting and dielectric qualities and high tensile strength.

Switch contacts and fuse clips are substantial. AAR Binding Posts replace unsatisfactory screws furnished on commercial switches and cut-outs.

Ordering Information

Regularly furnished with Raco Insulated Nuts.

Fuses are not furnished unless specified.

It can be furnished, when specified, for fusing either the positive or negative side only, but is regularly furnished for fusing both sides, as illustrated.

Packed in a carton with two brass wood screws.

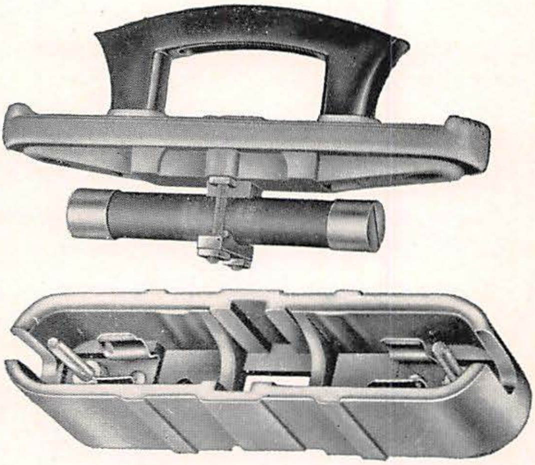
Ordering References

No. 324-3	Raco Disconnect Switch complete less fuses.
No. 324-4	Raco Disconnect Switch complete with 2 fuses (specify amperage).
No. 324-15	Raco Disconnect Switch complete without fuses, with bus bar.

Dimensions: 3″ wide, 6″ long, 4″ high.

Approximate net weight, 3 lbs. each.

No. 497 RACO SINGLE POLE 600V DISCONNECT SWITCH



No. 497 Raco Single Pole 600 volt Disconnect Switch made of AAR dry process porcelain with a bakelite handle. The renewable 3 to 30 amp. 600 volt fuse (13/16″ diameter, 5″ long) is securely clamped to the cover. The circuit is dead when fuses are renewed or replaced. The heavy fuse clips are nickel plated.

Switches may be supplied with renewable fusible link fuses, Raco non-fusible links No. 497-40 or 600 volt fusetrons.

Panel board enclosures of ⅜″ ebony asbestos can be furnished where multiple switches are used, with back wiring between switches arranged as required.

Ordering References

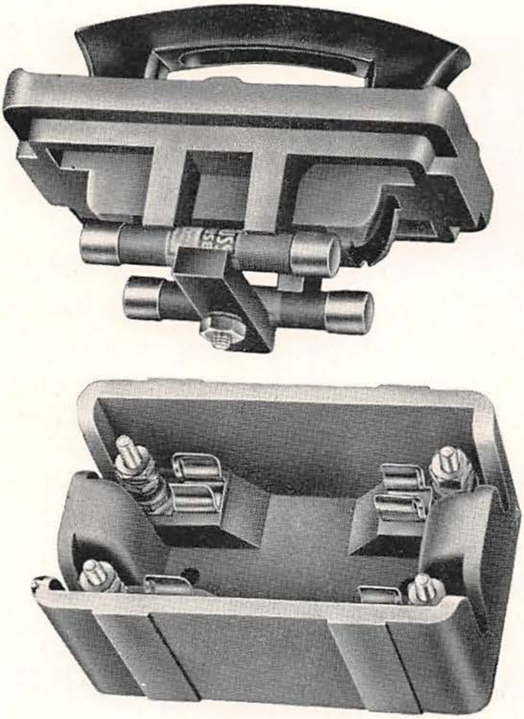
No. 497-1	Raco Single Pole 600 volt Disconnect Switch with fuse complete.
No. 497-2	Same as No. 497-1 but without fuse.
No. 497-10	Raco Single Post 600 volt Disconnect Switch with 2 back wiring binding posts for mounting on 2″ thick switch board.
No. 497-9	Cover complete without fuse.

Please order by number and specify fuse, non-fusible links or fusetron required.

Dimensions: 7⅞″ long, 1-15/16″ wide, 5″ high.

Approximate net weight: 2½ lbs.

No. 506 RACO 600V DOUBLE POLE DISCONNECT SWITCH



Same quality as the single pole switch No. 497.

This switch uses 3¼″ fuses with 9/16″ ferrule; 0-600 volts—3 to 5 amperes.

Ordering References

No. 506-1 Raco 600V Double Pole Disconnect Switch complete with fuses.

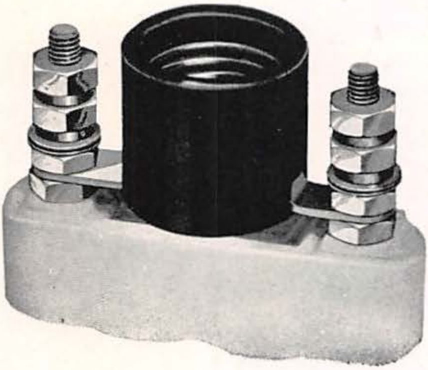
No. 506-2 Raco 600V Double Pole Disconnect Switch except without fuses.

Please order by number and specify fuses, if required.

Dimensions: 5¾″long, 3½″ wide, 5¼″ high.

Approximate net weight: 4 lbs.

RACO SCREW BASE RECEPTACLE



Where resistors, plug fuses, lamps, voltage regulators, etc., with standard screw bases are used in signal service, the Raco Screw Base Receptacle will eliminate failures due to loose connections.

Ordering References

No. 331-1 Receptacle only.

No. 331-2 Receptacle complete with AAR Porcelain Block.

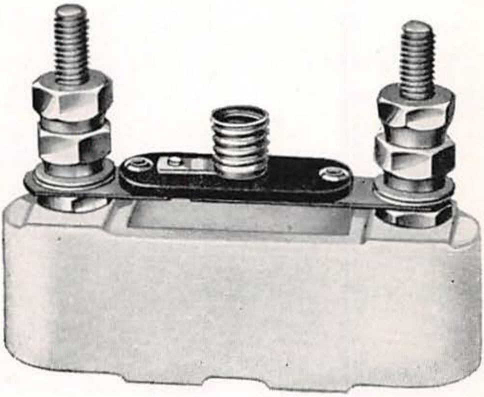
Dimensions: Height, mounted 2½″.
Outside diameter of receptacle, 1⅞″.

RACO INDICATING LAMP HOLDER

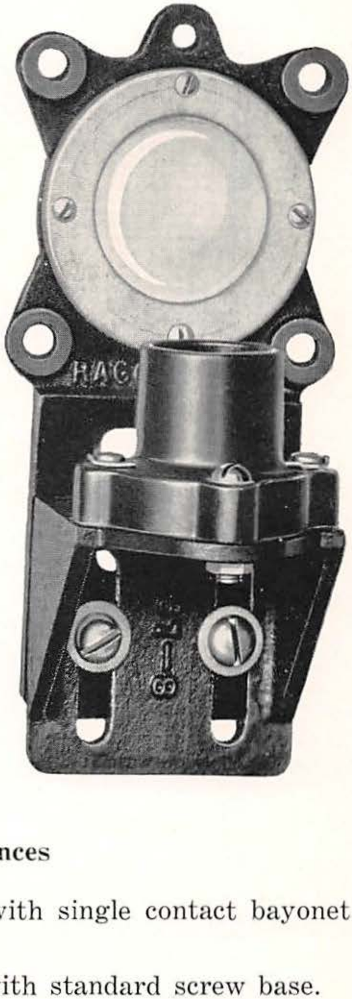
Ordering References

No. 280-1 Lamp Holder Unit only, without porcelain terminal block or lamp bulb.

No. 280-2 Lamp Holder Unit complete, with AAR porcelain terminal block but without bulb.



RACO POWER-OFF INDICATOR



The Raco Power-Off Indicator is especially designed for use with trickle-charge signal systems to indicate to maintainers or other personnel, while riding rear ends of trains or motor cars, the condition of the charging apparatus at each location.

It can be used on either metal or wood cases and is generally mounted with lens parallel to the track.

Lamp control may be as required. When connected across circuit, (as indicated on Page 86) the light is out when the fuse is blown.

The hole required in apparatus housing for the clear glass lens is 1¾″ diameter. The four holes for fastening to case are ⅜″ diameter, 2½″ center to center.

We do not furnish the lamp bulbs.

Ordering References

No. 461-1	Raco Power-Off Indicator with single contact bayonet base.
No. 461-2	Raco Power-Off Indicator with standard screw base.

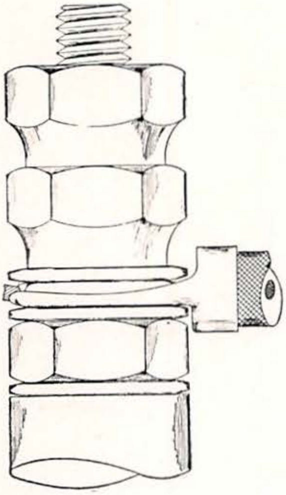
Note: Please state whether Indicators are to be used on metal or wood cases so that correct fastening bolts or wood screws can be furnished.

SECTION F

Terminals, etc.

	Page No.
Bee Wire Terminals	94-96
Raco Eyelet Pliers	96
Raco Cup Terminals	97
Raco Multi-Unit Terminals	98
Raco Universal Terminals	99
AAR Terminal Blocks	100
Everett Tag Terminals	100
AAR Binding Posts, Nuts and Washers	100
Connectors, Everett Tag Strips	101
Raco Insulated Nut	102
Raco Insulated Wrench	102
Everett Fuse Blocks	103
Everett Safety Testing Links	104
E-Z Testing Terminal	105
Raco 3-Post Testing Terminal	106

BEE WIRE TERMINALS



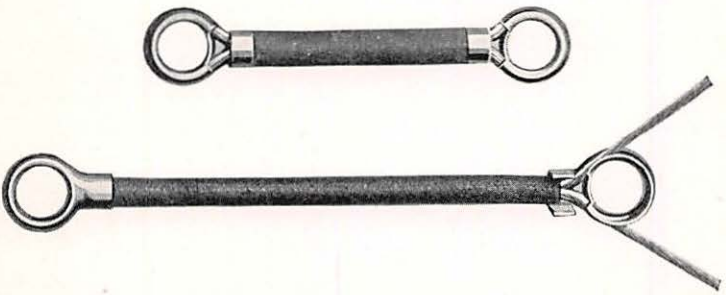
Bee Wire Terminals are made of copper and are tinned. They are quickly and easily applied to the wire.

The shank reinforces the bare wire near the binding post and causes the strains of bending, vibrations, etc., to be thrown back upon the insulated portion of the wire.

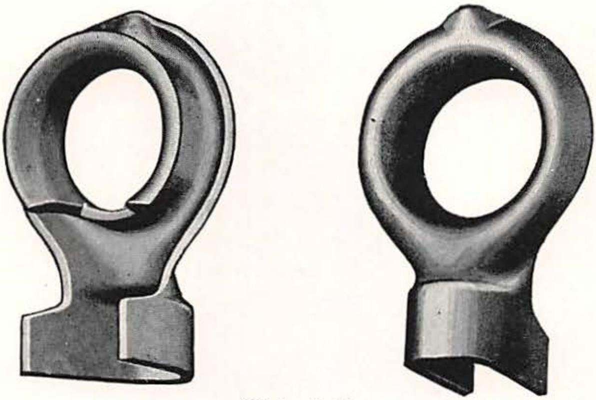
There is no danger of weakening the strands by cutting or nicking, no matter what the pressure, as a portion of the rim of the eyelet is cut away to avoid this.

Raco Bee Wire Terminals close securely around the strands and make an excellent contact over a large surface of the wire which is then securely clamped under the constant pressure of the nut on the binding post.

Raco Bee Wire Terminals have proven themselves, over a long period and under every condition.



BEE WIRE TERMINALS



(Patented)

Ordering References

(For standard No. 14 AAR Binding Post)

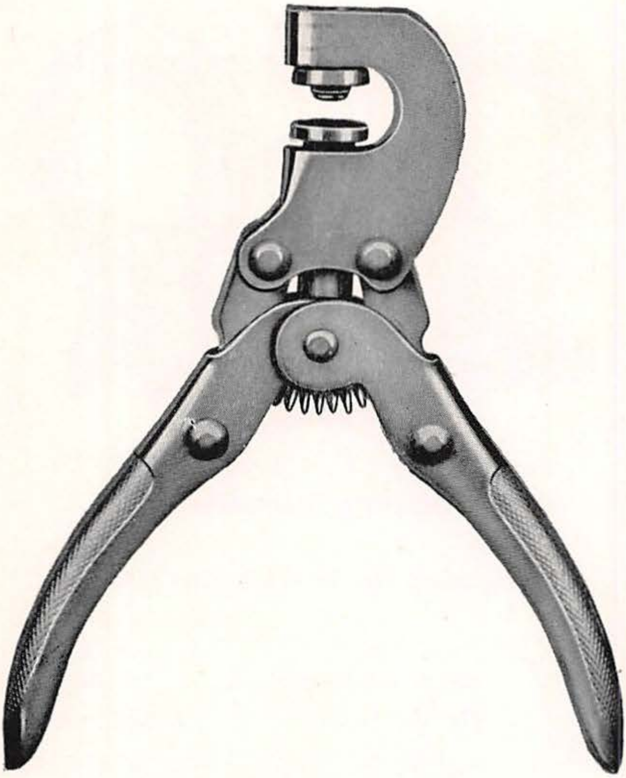
No.	Takes A.W.G. Wire Sizes	Takes Insulation O.D.
530-5	No. 14, 16, 18	5/32″ and smaller
530-1	No. 14, 16, 18	3/16″ to 7/32″ inc.
530-2	No. 14, 16, 18	1/4″ to 5/16″ inc.
530-4	No. 12	1/4″ to 5/16″ inc.
530-3	No. 12 to No. 9	3/8″ and smaller
	(For No. 10 Binding Post)	
530-6	No. 14, 16, 18	5/32″ and smaller

Note: Shanks of No. 530-3 can readily come together on 1″ centers. Provision should, therefore, be made to insulate them.

Standard packages: Nos. 530-3, -4 and -6, 500 to carton; all others 1000 to carton.

RACO EYELET PLIERS

(For Bee Wire Terminals)



No. 530-10

For some time past we have been developing and thoroughly testing in the shop and on the road, a special eyelet plier, to produce a still tighter connection between a Bee Wire Terminal and a stranded wire.

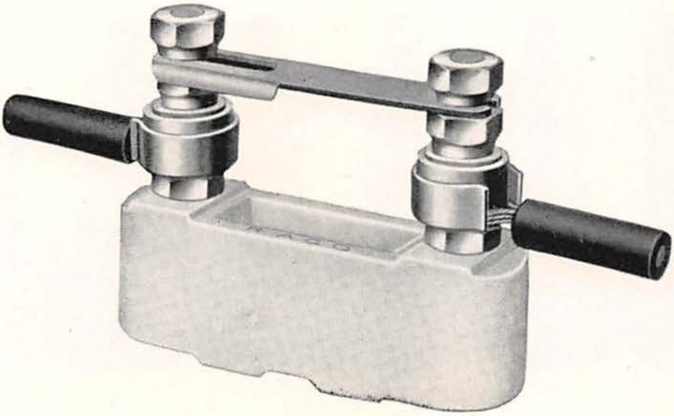
We use a Seal Press design. First, because it provides much greater power with considerably less effort, and second, because it provides a tighter contact between the wire and the Bee Wire Terminal.

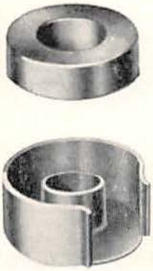
Another good effect is gained by the use of an anvil, as shown, since the anvil holds the eyelet, to produce a better final shape.

The Raco Eyelet Plier is manufactured in our own factory.

These pliers are for use with Bee Wire Terminals, made for No. 14-AAR binding posts.

RACO CUP TERMINALS





No. 289

An improved means for connecting the larger sizes of stranded wires to AAR Terminal Posts.

While especially designed to take No. 6 for which no Bee Wire Terminal is made, it makes a tight and reliable connection to any size wire up to No. 6 A.W.G.

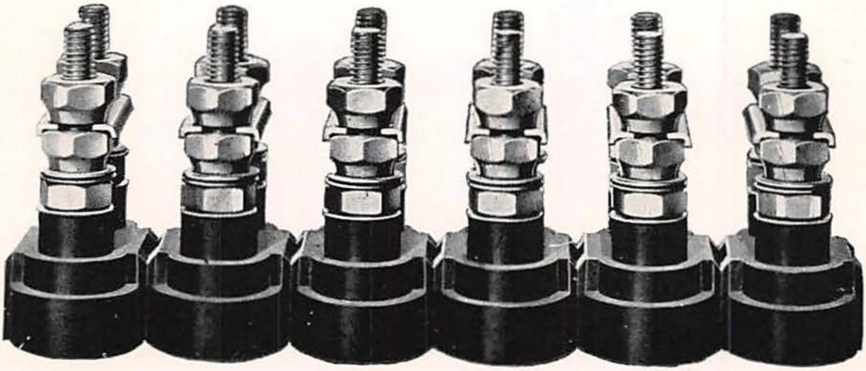
It fully encloses the strands and provides increased bearing surface, insuring perfect and permanent contact.

Its outside diameter is ¾″, which allows sufficient clearance when used on 1″ centers.

Ordering References

No. 289-5	Raco Cup Terminal for 14-24 AAR binding posts.
No. 289-6	Raco Cup Terminal for very short binding posts, for 14-24 AAR.
No. 289-10	Raco Cup Terminal for 5/16″ binding posts.

No. 274 RACO MULTI-UNIT TERMINAL



The block is easily separated into any number of units less than six by sawing apart.

Current leakage due to surface moisture is provided against in its design.

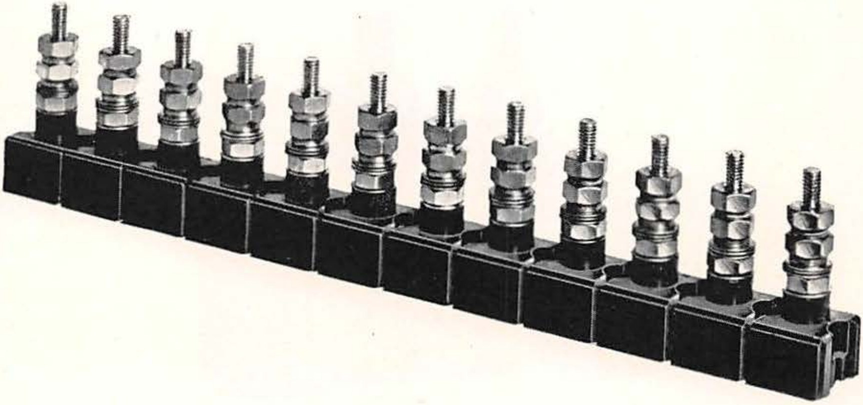
Ordering References

No. 274-5	Multi-Unit Terminal Block of six units, with AAR 10761 Connector (as shown).
No. 274-6	Multi-Unit Terminal Block of six units, with AAR 10763 connector.
No. 274-7	Multi-Unit Terminal Block of six units, with Everett Tag connectors, No. 827.

Dimensions: 6$\frac{3}{8}$″ long, 2$\frac{1}{2}$″ high, 1-15/16″ wide. Centers lengthwise, 1-1/16″.

Raco Multi-Unit Terminals are put up in cartons containing 10 blocks (60 units). Approximate net weight: 14 lbs. per carton.

No. 390 RACO UNIVERSAL TERMINAL



The block is easily separated into any number of units by sawing apart.

They can be separated into two-post terminals with 1″ centers. They can be used in parallel rows, for centers of 1″ or more as required, or set up in parallel rows, staggered for thru wire connections to single posts.

Current leakage, due to surface moisture, is provided against in the design.

Ordering References

No. 390-1	Raco Universal Terminal Block of 12 single posts, without connectors or wood screws.
No. 390-2	Raco Universal Terminal Block of 6 single posts, without connectors or wood screws.

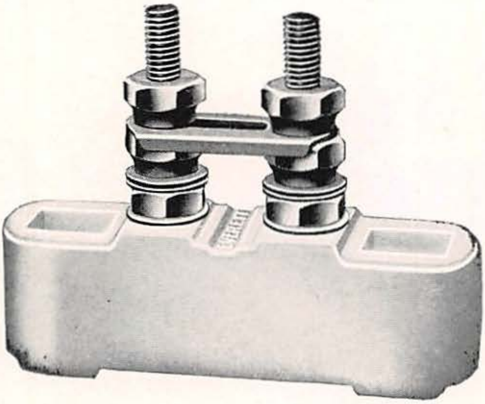
These are furnished with AAR binding post 10781.

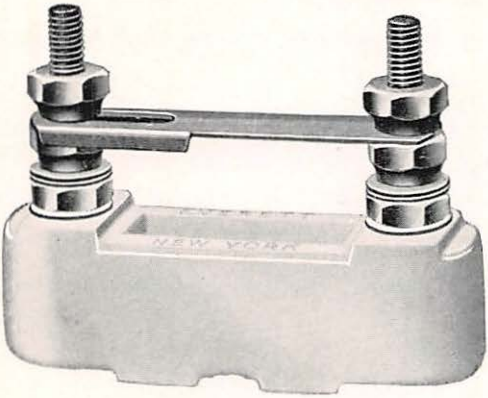
Raco Universal Terminals are put up in a carton containing 10 blocks of 12 single posts, or 20 blocks of 6 single posts, as ordered.

Dimensions: 12″ long, 2½″ high, 1″ wide and 1″ binding post centers.

Approximate net weight: 14 lbs. per carton.

AAR TERMINALS—EVERETT TAG TERMINALS
AAR BINDING POSTS, NUTS AND WASHERS





Ordering References

AAR Assembly No. 105614, 1″ centers, with AAR 10761 Connector (as shown).

AAR Assembly No. 105614, 1″ centers, with AAR 10763 Connector.

AAR Assembly No. 105615, 2⅜″ centers, with AAR 10762 Connector (as shown).

AAR Assembly No. 105615, 2⅜″ centers, with AAR 10764 Connector.

No. 825 Same as AAR Assembly No. 105614 above, except with Everett Tag Connector No. 827 (page 101) for 1″ centers.

No. 826 Same as AAR Assembly No. 105615 above, except with Everett Tag Connector No. 828 (page 101) for 2⅜″ centers.

AAR Binding Posts, Nuts and Washers.

No. 831 AAR 10706 Brass hex binding nuts.

No. 832 AAR 10707 Brass hex clamp nuts.

No. 833 AAR 10709 Binding post.

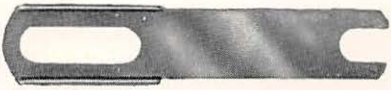
No. 834 AAR 10708 Beveled copper washers.

CONNECTORS

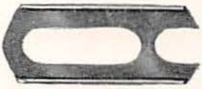
EVERETT TAG CONNECTORS

Ordering References

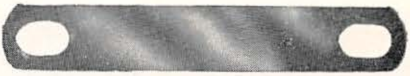
No. 836 AAR No. 10762 Standard Copper Connector only, for 2⅜″ centers.



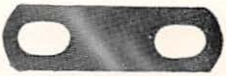
No. 837 AAR No. 10761 Standard Copper Connector only, for 1″ centers.



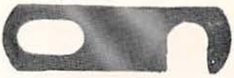
No. 839-1 AAR No. 10764 Standard Copper Connector only, for 2⅜″ centers.



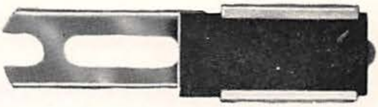
No. 839-2 AAR No. 10763 Standard Copper Connector only, for 1″ centers.



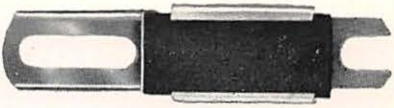
No. 839-3 Connector for 1″ centers.



No. 827 Everett Tag Connector only, for 1″ centers, with tag.



No. 828 Everett Tag Connector only, for 2⅜″ centers, with tag.



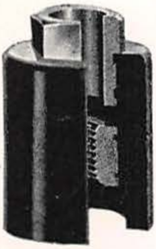
We also make AAR Copper Buss.

No. 839-4 AAR No. 10765 Blank Buss.

No. 839-5 AAR No. 10766 Bus—holes 1″ centers.

No. 839-6 AAR Buss—holes 1-1/16″ centers.

No. 408 RACO INSULATED NUT



The Raco Insulated Nut consists of two brass nuts set in Bakelite with the top nut provided with AAR standard hex head for tightening with standard socket or open end wrenches.

The inside diameter of the top nut is considerably greater than the diameter of the binding post, so that no contact is possible between them.

The Raco Insulated Nut is so strong that it will generally twist off the binding post before it will break.

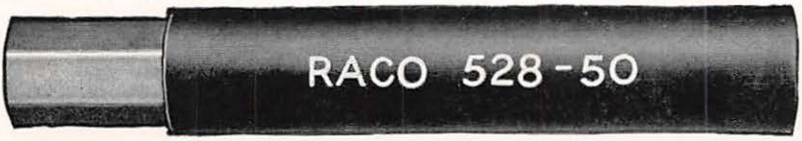
Packed in cartons of 100 each.

Ordering Reference

No. 408 Raco Insulated Nut.

Note: No. 85 Universal Test Clip fits inside Raco Insulated Nut.

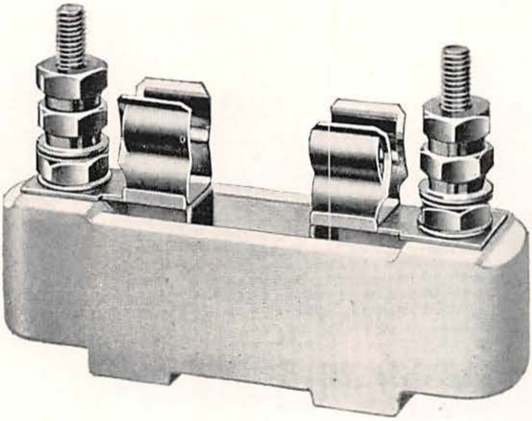
RACO INSULATED WRENCH



No. 528-50 Raco Insulated Wrench.

Railroad identification initials can be stamped on insulated handle if so specified.

EVERETT FUSE BLOCKS



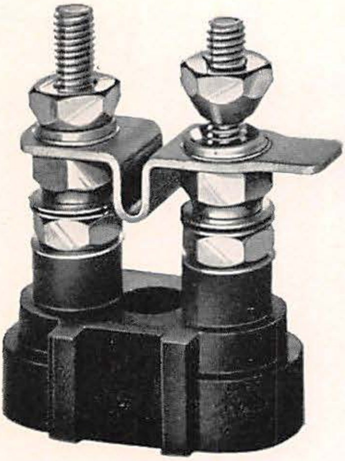
The No. 840 Everett Fuse Block takes all standard cartridge type fuses 2″ long with ferrules 9/16″ in diameter.

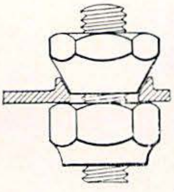
Dimensions: 4⅛″ long, 1″ wide, 2¾″ high.

The No. 841 Everett Fuse Block takes all standard cartridge type fuses 5″ long with ferrules 13/16″ in diameter.

Dimensions: 7″ long, 1-5/32″ wide, 2⅝″ high.

EVERETT SAFETY TESTING LINKS



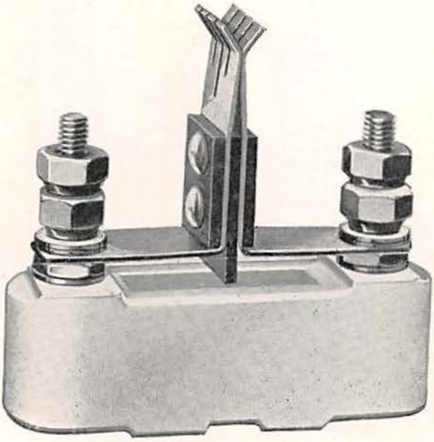


They are formed from a single piece of heavy copper. The holes are large enough to allow the safety link to clear the post when the cone nut is loosened. The taper fit, between the cone nut and the safety link, provides a large wiping surface and insures maintenance of a low contact resistance. The link cannot swing into contact with an adjoining terminal.

Ordering References

No. 865	Everett Safety Testing Link, for 1″ centers, complete with two special cone nuts. $17.00 100
No. 867	Everett Safety Testing Link, for 2⅜″ centers, complete with two special cone nuts.
No. 869	Cone nut only for Everett Safety Testing Link.
No. 871	Safety Testing Link only (without nuts) for 1″ centers.
No. 872	Safety Testing Link only (without nuts) for 2⅜″ centers.

E-Z TESTING TERMINAL



E-Z Testing Terminals provide a quick and convenient means for taking meter readings without disturbing the circuit and they insure against leaving loose connections with consequent intermittent trouble and signal failures.

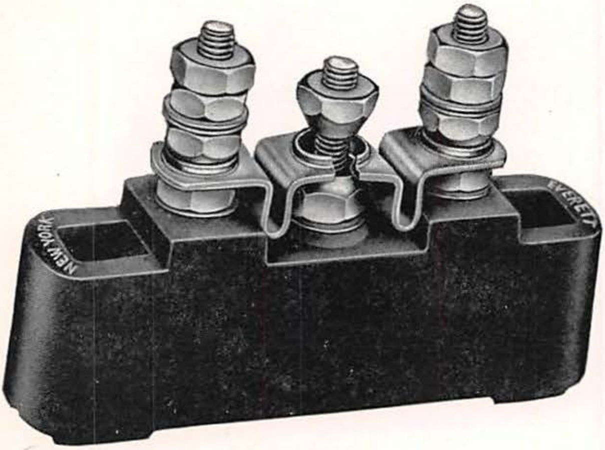
The connecting strip is made of heavy, non-corroding spring metal and insures a positive, permanent, non-corroding contact.

Ordering References

No. 725	E-Z Testing Terminal (contact blades closed) complete with AAR Porcelain Terminal Block, 2⅜″ centers.
No. 726	E-Z Testing Terminal (contact blades closed) without AAR Porcelain Terminal Block.
No. 727	E-Z Testing Terminal (contact blades open) complete with AAR Porcelain Terminal Block, 2⅜″ centers.
No. 728	E-Z Testing Terminal (contact blades open) without AAR Porcelain Terminal Block.
No. 412-1	Insulator only for breaking the circuit.

(We advise the use of this insulator. The separator blades are made of bone, work easily, and do not open contacts too far.)

RACO 3-POST TESTING TERMINAL



No. 551-2

Porcelain Terminal with AAR Binding Posts. The two links are clear of the center post when the cone nut is backed off. When tightened down, the cone nut on the center post makes and excellent wiping contact with the links and holds them securely against the nut below.

Ordering References

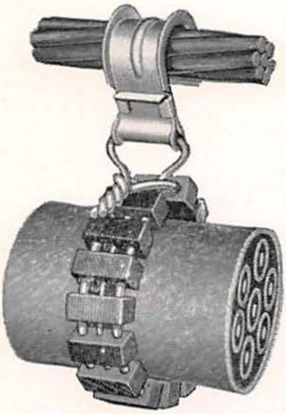
No. 551-2	Raco 3-Post Testing Terminal (see illustration).
No. 551-1	Raco 3-Post Testing Terminal similar to No. 551-2 but mounted on three posts of Raco No. 390 Universal Terminal (page 99).

SECTION G

Line Materials, Blades and Number Plates

	Page No.
Raco Cabling Straps	108-112
Raco Cable Drop	113
Raco Deadends	114-115
Raco Line Tap	116
Lavar Enameled Steel Signal Blades	117
Lavar Enameled Steel Dwarf Signal Blades	118
Unitype Number Plates	119-121

RACO BEAD CABLING STRAPS



Raco Bead Cabling Strap No. 503 is designed for hanging cable to ½″ dia. messenger or smaller.

The hook and the wires are made of bronze and the beads of the same plastic as is used in Raco Line Taps which have been in service on pole lines for 25 years, with no sign of deterioration.

It is manifest that the life of these straps on pole lines should be as great as that of the cable.

Their strength provides a very large factor of safety above the maximum recommended load per strap of 20 pounds. The usual spacing is 12″ to 15″.

Following are additional important advantages gained by the use of Raco Bead Cabling Straps:

Free swinging; no strain is placed on any part of the strap by reason of sway.

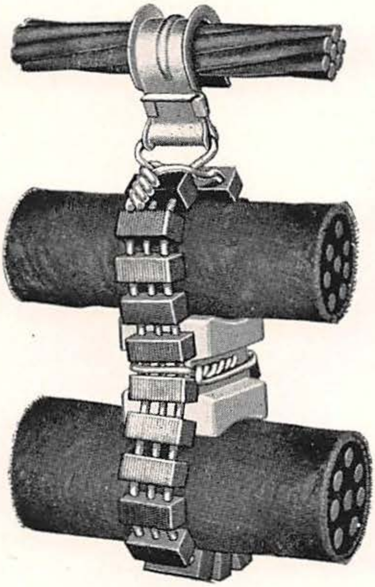
They are quickly and easily applied to wires or cable with ordinary pliers.

When tightened, there is no movement on cable and no abrasion of either cable or strap parts.

The hooks can also be tightened on the messenger, if desired.

They can be applied to cable on the ground and the hooks can be alternately reversed, if desired.

RACO BEAD CABLING STRAPS



They will not stretch or burn.

Their construction allows free circulation of air under the strap.

The cable can be painted through the strap.

The cable is insulated from the messenger.

The straps cannot run together on cable or messenger.

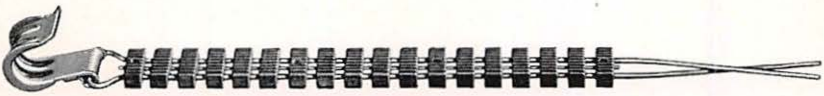
The beads are held correctly spaced.

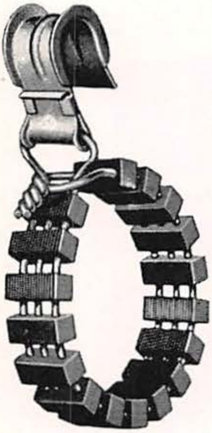
Over a period of time they are substantially more economical than marlin or other accepted means.

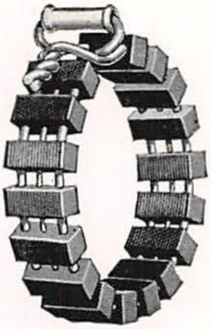
Raco Bead Cabling Straps are shipped straight, in cartons of 100 straps each.

Raco Cabling Straps have been extensively used for carrying two or more cables. In such cases porcelain separators, as illustrated, are often used.

RACO BEAD CABLING STRAPS







Ordering References

Diameter of cable	Length of strap	With hook for ½″ messenger or smaller	Without hook
1″	4″	503-11	503-51
1½″	5½″	503-12	503-52
2″	7″	503-13	503-53
2½″	8½″	503-14	503-54
3″	10″	503-15	503-55
3½″	11½″	503-16	503-56
4″	13″	503-17	503-57
4½″	14½″	503-18	503-58
5″	16″	503-19	503-59
5½″	17½″	503-20	503-60
6″	19″	503-21	503-61

Note: Lengths given are from hinge to end of beaded portion only. An additional 5% of wire is allowed for wastage.

Straps can be shortened by pushing beads out beyond ends of guide wires and breaking off beads not wanted; then push beads back as far as they will go.

RACO BEAD CABLING STRAPS

Ordering Reference

No. 503-72 Porcelain separator with binding wire.

Ordering Information

When ordering for two or more cables, either with or without porcelain separators, the following information is necessary:

First, the number and outside diameter of the cables, or the length of the straps to be furnished.

Second, the number of separators wanted.

Note: Lengths given are from hinge to end of beaded portion only.

Following are lengths of straps necessary for various cable combinations we have furnished:

Ordering References

For 2 or more cables with separators.

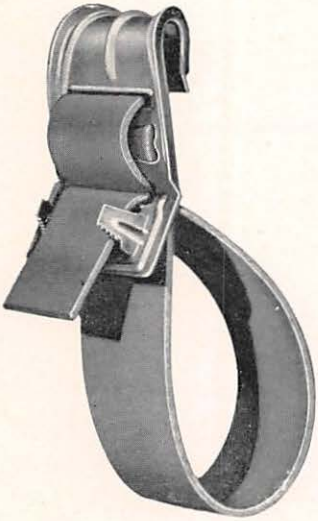
	No. of Cables	Size of Cables	No. of Separators	Length of Strap
503-81	3	15/16″ x 15/16″ x 15/16″	2	11½″
503-82	2	1″ x ⅞″	1	8½″
503-83	2	1-1/16″ x 1″	1	8½″
503-84	3	1-3/16″ x 1-3/16″ x 1-3/16″	2	13¾″
503-85	2	1¼″ x 1-3/16″	1	9¼″
503-86	2	1-5/16″ x 1″	1	9¼″
503-87	2	1½″ x ⅞″	1	10″
503-88	2	1½″ x 1-1/16″	1	10″
503-89	3	1½″ x 1-1/16″ x ⅞″	2	13″
503-90	2	1½″ x 1½″	1	10¾″

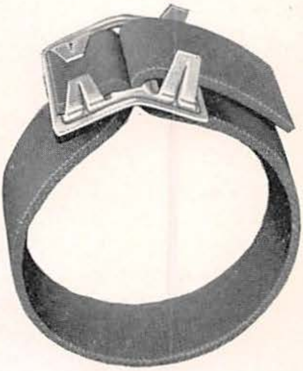
For 2 or more cables without separators.

	No. of Cables	Size of Cables	Length of Strap
503-13	3	15/16″ x 15/16″ x 15/16″	7″
503-12	2	1″ x ⅞″	5½″
503-102	2	1-1/16″ x 1″	6¼″
503-103	3	1-3/16″ x 1-3/16″ x 1-3/16″	9⅝″
503-13	2	1¼″ x 1-3/16″	7″
503-13	2	1-5/16″ x 1″	7″
503-13	2	1½″ x ⅞″	7″
503-13	2	1½″ x 1-1/16″	7″
503-108	3	1½″ x 1-1/16″ x ⅞″	9¼″
503-109	2	1½″ x 1½″	8⅞″

RACO CABLING STRAPS

Rubber Fabric Type





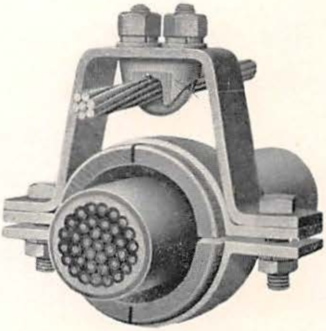
No. 219 Fabric Straps
(Neoprene Impregnated)

We are continuing to make this strap for special uses—subways, etc.

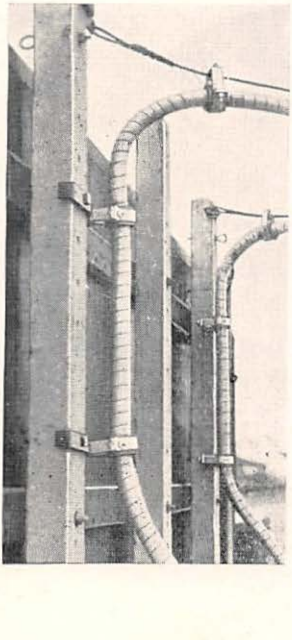
Ordering References

Diameter of Cable	Over-All Length of Strap	With Hook for ½″ Messenger or Smaller	Without Hook
1″	7″	219-11	219-51
1½″	8¼″	219-12	219-52
2″	9⅞″	219-13	219-53
2½″	11½″	219-14	219-54
3″	13″	219-15	219-55
3½″	14⅝″	219-16	219-56
4″	16¼″	219-17	219-57
4½″	17⅞″	219-18	219-58
5″	19½″	219-19	219-59
5½″	21″	219-20	219-60
6″	22⅝″	219-21	219-61

RACO CABLE DROP



Wherever it is necessary to grip cable firmly to support it or to prevent creeping, the Raco Cable Drop will be found a most useful, permanent and reliable device.



The Raco Cable Drop is made with a hot galvanized steel frame fitted with an impregnated yellow birch spool for clamping to cable, and a clip for clamping to messenger. It can be furnished to take cable up to 3¼″ diameter.

Ordering References

No.	
304-9	Raco Cable Drop with clip for ⅝″ messenger.
304-10	Raco Cable Drop with clip for ½″ messenger.
304-16	Raco Cable Drop without clip.

Please specify diameter of cable.

Approximate net weight: 4¾ lbs. each.

RACO DEADENDS

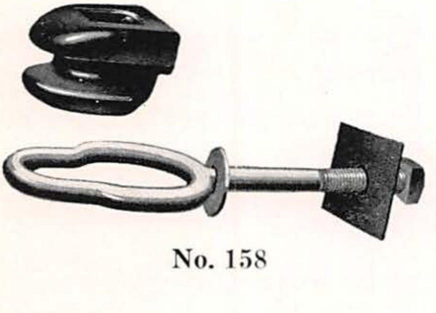
Raco Deadends are made of steel or malleable iron and all metal parts are galvanized.

The porcelain insulators are made by the semi-wet process, finished with a high quality glaze.

Tests made indicate that it requires a pull of 4500 pounds to break down the porcelain. Compared with the breaking weight of No. 6 hard drawn copper wire this is a factor of safety of nearly 4 to 1.

In the event of a porcelain insulator breaking, the wire is held by the eye-bolt and does not drop to the ground.

The porcelain insulators are so designed that they drop into the eye-bolt from one side only and will not fall out while the wires are being attached.



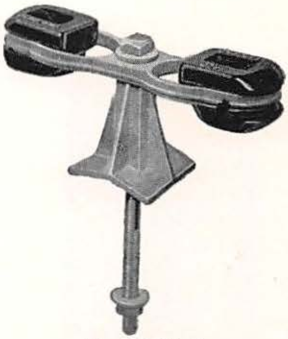
No. 158

Ordering Reference

No. 158 Raco Single Deadend complete, as illustrated.

The eye-bolts with nuts and washers are put up in standard packages of 50. Approximate net weight: 60 lbs.

RACO DEADENDS



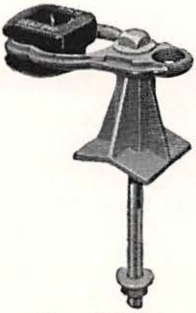
No. 239-1

These are designed for use on standard AAR Crossarms to keep wires at same elevation as standard pins.

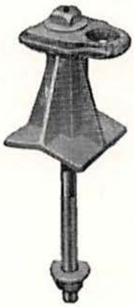
Ordering Reference

No. 239-1 Raco Double Deadend complete, as illustrated.

The metal parts are put up in standard packages of 25. Approximate shipping weight: 90 lbs.



No. 239-6



No. 239-7

Ordering References

No.	
239-6	Raco Deadend and Anchor complete, as illustrated.
239-7	Raco Deadend Anchor complete, as illustrated.
149	Porcelain insulator only for all Deadends.

The porcelain insulators are packed separately in standard packages of 50. Approximate net weight: 32 lbs.

No. 174 RACO LINE TAP

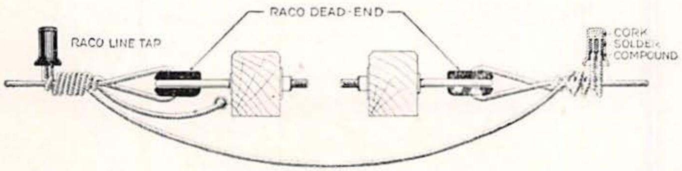
A simple and improved means for connecting branch to line wires. Single or multiple taps can be made as required.

Provides a low resistance joint and a dry spot insulator so necessary in C.T.C. line circuits.

To make the connection, it is only necessary to pour sufficient molten solder into the flared, Plastic Cap to cover the bared portion of the wires. The cork in the cap holds the wires while you do this. After the solder has set, sealing compound should be poured on top of it to insure permanent protection against corrosion. After this is done, the Raco Line Tap can be turned to its upright position and the job is complete.

Standard packages of 50.

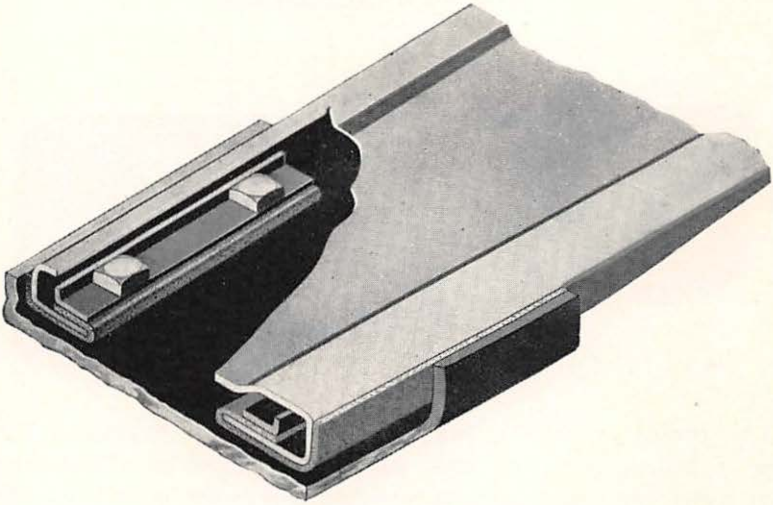
Approximate net weight: 4 lbs.



Ordering Reference

No. 174 Raco Line Tap.

LAVAR ENAMELED STEEL SIGNAL BLADES



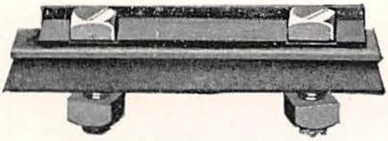
Unless fully covered by blue print, orders should specify:

Whether tapered grip end to fit AAR blade grip (AAR drawing No. 1040) or square grip end to fit old style blade grip, is required.

Length of blade and shape of end (whether square, pointed, forked, etc.).

Colors of blade, front and back.

Shape and color of stripe.



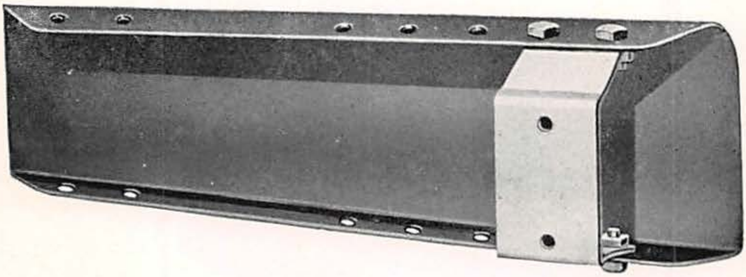
Locking strips, felt pads, and bolts and nuts are furnished as part of the blade. These are shipped out assembled and ready to slip on to the blade before it is mounted.

Attachment Parts Ordering References

No. 118-7 Attachment parts complete with ½″ bolts.

No. 118-8 Attachment parts complete with ⅜″ bolts.

LAVAR ENAMELED STEEL DWARF SIGNAL BLADES



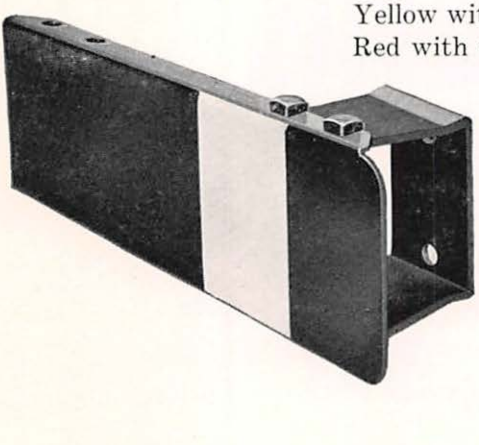
It is furnished with a heavy galvanized steel bracket which is bolted to the sides of the blade, as shown, and can be adjusted as desired for clearance, making it possible to use the larger size dwarf blade in practically all cases and thereby greatly improving the indication.

Ordering References

No. 113-7 Lavar Dwarf Blade — 14 inches long — 5 adjustments.

No. 113-8 Lavar Dwarf Blade — 9 inches long — 2 adjustments.

Lavar Dwarf Blades are regularly furnished in two color combinations as follows:



Yellow with black stripe
Red with white stripe

Please specify colors.

Furnished complete with brackets unless otherwise specified.

UNITYPE NUMBER PLATES

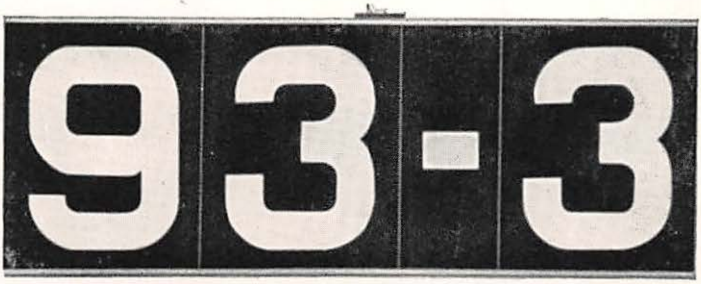
The frame of the Unitype Number Plate is made of sections of J-shaped steel which are accurately spaced and riveted to the cross members as shown.

The number plates are made of vitrified enameled steel and are slidably mounted in the frame.

Each number being a separate unit, the individual numbers can be replaced, if damaged.

These number plates are made in both horizontal and vertical types.

The colors are white number on a black background—AAR standard.



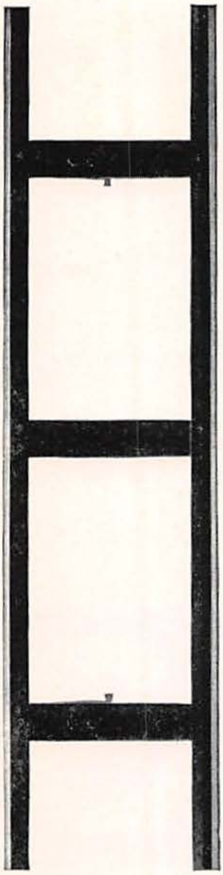
No. 117-4

Ordering Reference

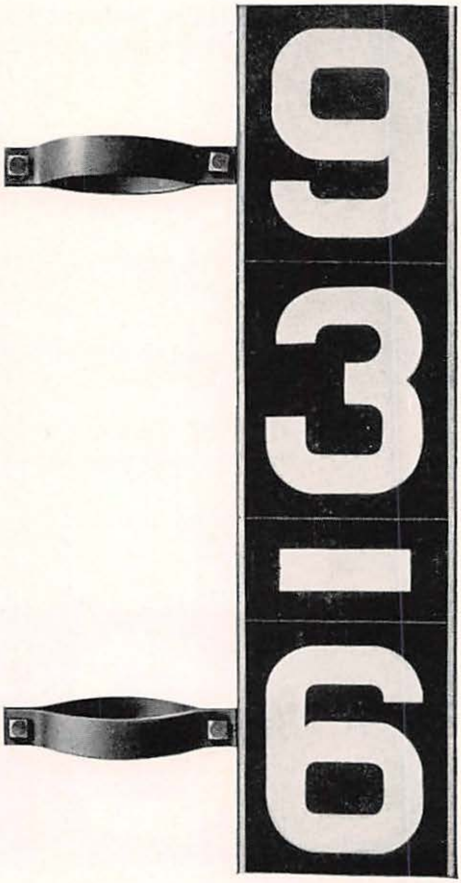
No. 117-4 Frame with clamps only (shown with sample number plates inserted).

Unless otherwise specified, two sets of 5″ pole clamps are regularly furnished with each frame.

UNITYPE NUMBER PLATES



No. 117-1



No. 117-2

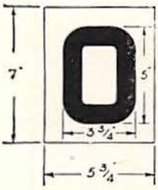
Ordering References

No. 117-1 Frame with clamps only (for front of pole mounting).

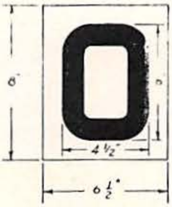
No. 117-2 Frame with clamps only (for side of pole mounting) (shown with sample number plates inserted).

Unless otherwise specified, two sets of 5″ pole clamps are regularly furnished with each frame.

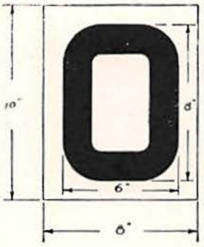
UNITYPE NUMBER PLATES



No. 8
1″ stripe



No. 5
1⅛″ stripe



No. 6
1½″ stripe

Ordering References

The following references cover frames, clamps and enameled plates complete.

	Plate Sizes		
Vertical	**No. 8**	**No. 5**	**No. 6**
Front of pole	No. 117-1-8	No. 117-1-5	No. 117-1-6
Side of pole	No. 117-2-8	No. 117-2-5	No. 117-2-6
Horizontal	No. 117-4-8	No. 117-4-5	No. 117-4-6

For horizontal frames, a narrow No. 1 enameled plate can be furnished. Specify if desired.

Unless otherwise specified, two sets of 5″ pole clamps are regularly furnished with each number plate.

When ordering enameled plates only, if dashes are ordered, specify whether for horizontal or vertical frames.

Special straps to attach unitype number plates to bridges and other structures can be furnished.

ENAMELED STEEL PLATES, SIGNS, ETC.

We furnish enameled steel plates in all sizes; also signs of various kinds.

We can still furnish our **Cutout Type Number Plate** for those desiring it.

SECTION H

Miscellaneous

Page No.

Hercules Pipe Carrier Bases 124
Raco Self-Adjusting Switch Circuit Controller Rods and Sockets 125-130
Raco Point Lugs 130
Raco Switch Adjusting Wrenches 131
Raco Shunt Connections 132-133
Raco Padlocks 134
Raco Transverse Pipe Carrier 135
Raco Tags and Tag Twine 136-137
Raco White Tag Filler 136
Raco Battery Boxes 138
Raco Adjustable Cushioned Lamp Adapter 139
Raco Insulated Staple 140

HERCULES PIPE CARRIER BASE

Types R and P

These bases are malleable iron and the two rails are galvanized channel iron.

Rails are furnished up to 6 feet long and can be cut as required.

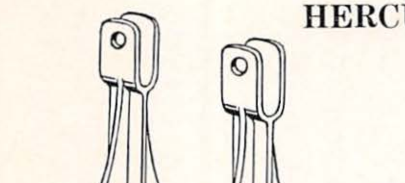
The following bolts, nuts, and washers are required, but are not furnished unless specified:

Attaching Rails to Pedestals:

Types R-1 and R-2

Two ½″ x ¾″ standard galvanized square head bolts and nuts for each pedestal.

Two ½″ x 1½″ cut washers for each pedestal.



Type R

Attaching Pedestals to Piers: For **No. 11091 AAR Cast Iron Pier**

Two ½″ x 1½″ standard galvanized square head bolts and nuts for each pedestal. Two ½″ x 1½″ cut washers for each pedestal.

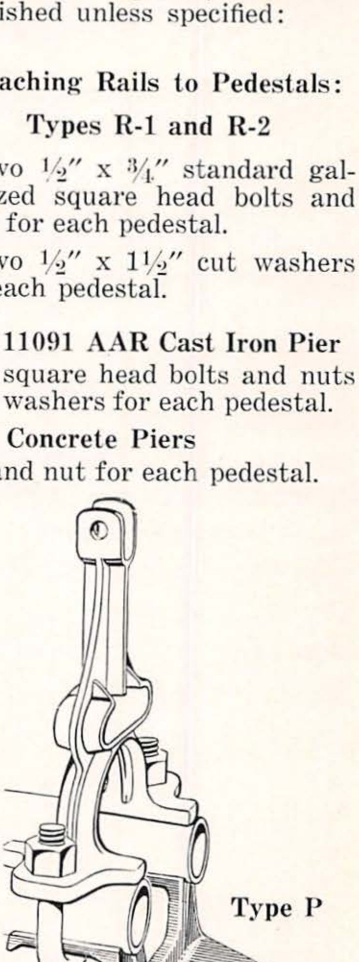
For **Nos. 10801 and 10802 Concrete Piers**

One ⅝″ x 7½″ galvanized hook bolt and nut for each pedestal.

Ordering References

No.	
R-1	Hercules Base only, for AAR Concrete Piers Nos. 10801 and 10802.
R-2	Hercules Base only, for AAR Cast Iron Pier No. 11091.
R-3	Hercules Base only, for concrete pier with 4 bolts cast in pier.
R-4	Rail only for Hercules Type R Bases, 6 ft. lengths.
P-1	Hercules Base only, for AAR Concrete Piers Nos. 10801 and 10802.
P-2	Hercules Base only, for AAR Cast Iron Pier No. 11091.
130	½″ Hook Bolt, as shown.

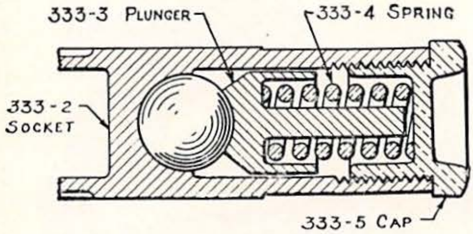
We furnish hook bolts and nuts for above only when specified.



Type P

RACO SELF-ADJUSTING SWITCH CIRCUIT CONTROLLER RODS

Raco Self-Adjusting Sockets prevent lost motion and loose parts in switch circuit controller and point lug connections.

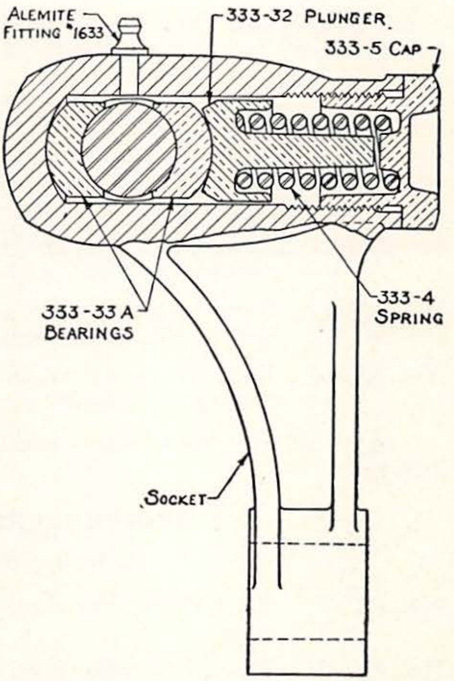

333-3 Plunger
333-4 Spring
333-2 Socket
333-5 Cap

Heavy non-rusting coil springs maintain the relation of the ball stud and point lug to their sockets at all times, taking up wear in these parts as it occurs and maintaining continuous perfect adjustment.

Any movement of the switch point, including rolling, immediately causes a corresponding and correct movement of the switch circuit controller arm.

Raco rods are now threaded with the American Standard Unified Thread with rounded roots. This construction is considered the very best where vibration is encountered. The new rods are interchangeable with the older American Standard V-threaded rods.

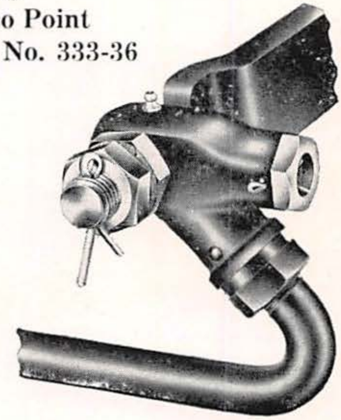
As shown in the following pages, there are two designs of Raco Controller Sockets, No. 333-7 and No. 333-37. The latter design is a matter of clearance.

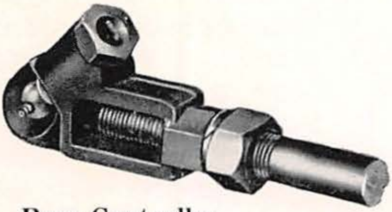

Alemite Fitting #1633
333-32 Plunger
333-5 Cap
333-33 A Bearings
333-4 Spring
Socket

RACO SELF-ADJUSTING SWITCH CIRCUIT CONTROLLER RODS

(333 Series)

Raco Point
Socket No. 333-36





Raco Controller
Socket No. 333-37

The Raco Switch Point Socket, shown above, is one of our earliest designs.

The illustration shows the Short Rod. The Long Rod extends to the right of the point socket.

Although Raco Controller Socket No. 333-37 is shown, of course, No. 333-7 can be used (see page 127).

Ordering References

(Rod complete but without Point Lug or Ball Stud)

No. 333-33	Raco Short Controller Rod, complete with Controller Socket No. 333-7 and Point Socket No. 333-36.
No. 333-34	Raco Long Controller Rod, complete with Controller Socket No. 333-7 and Point Socket No. 333-36.
No. 333-57	Raco Short Controller Rod, complete with Controller Socket No. 333-37 and Point Socket No. 333-36.
No. 333-58	Raco Long Controller Rod, complete with Controller Socket No. 333-37 and Point Socket No. 336-36.

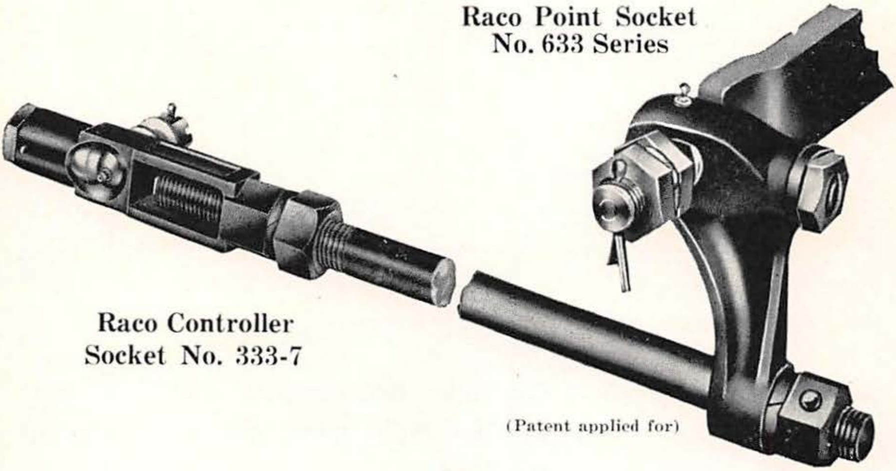
Length of rods listed above are the same as rods shown on pages 128-129.

CONTROLLER SOCKETS

Ordering References

No. 333-7	Raco Controller Socket for AAR Ball Stud (Straight type).
No. 333-37	Raco Controller Socket for AAR Ball Stud (Angular type).

RACO SELF-ADJUSTING SWITCH CIRCUIT CONTROLLER RODS


Raco Point Socket
No. 633 Series
Raco Controller
Socket No. 333-7
(Patent applied for)

The Raco Switch Point Socket, shown above, is the same as that which we have been making heretofore, except in one important respect.

In this design, the rod and the socket are **very slightly tapered** to fit each other, and when assembled, the nut is riveted to the rod (this socket is the 633 series).

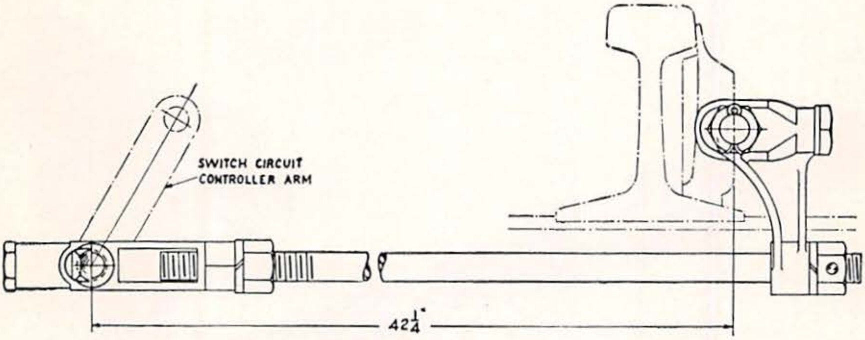
In our other similar design, the point socket is threaded and the rod screwed into it.

This improved design omits the threads from the rod at the point lug where vibration is concentrated, and where the rod breaks.

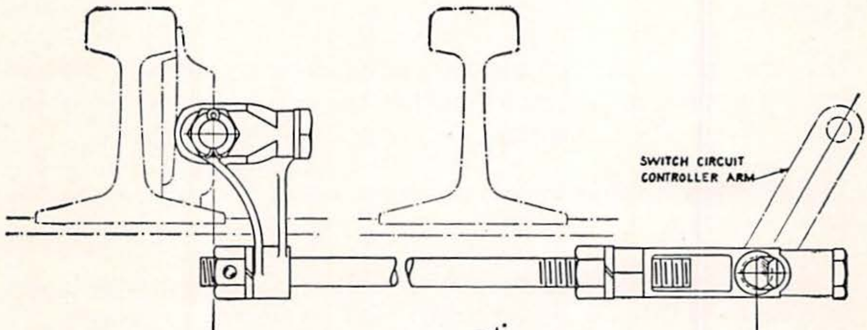
We furnish the rod and the point socket as a unit.

Although Raco Controller Socket No. 333-7 is shown, of course, No. 333-37 can be used (see page 126).

RACO SELF-ADJUSTING SWITCH CIRCUIT CONTROLLER RODS


SWITCH CIRCUIT CONTROLLER ARM
42¼"

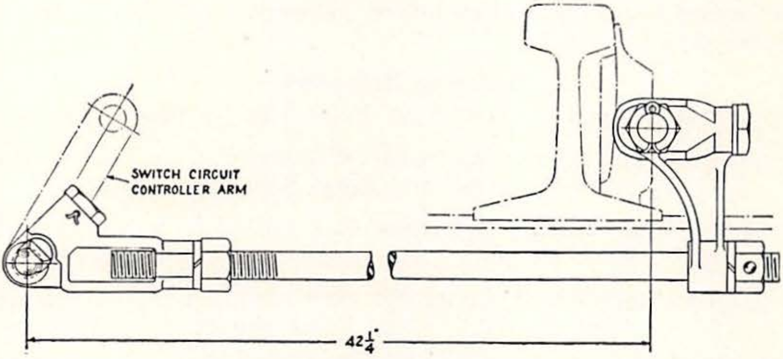
No. 633-12 Raco Short Controller Rod complete with Controller Socket No. 333-7 and Point Socket No. 633-4 (without point lug or ball stud).


SWITCH CIRCUIT CONTROLLER ARM
92¼"

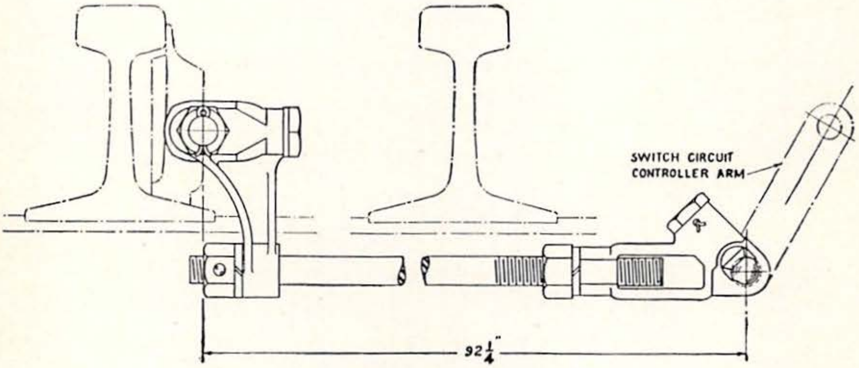
No. 633-14 Raco Long Controller Rod complete with Controller Socket No. 333-7 and Point Socket No. 633-5 (without point lug or ball stud).

Orders for special length rod should state center to center dimension, as shown above for standard lengths.

RACO SELF-ADJUSTING
SWITCH CIRCUIT CONTROLLER RODS


SWITCH CIRCUIT CONTROLLER ARM
42¼"

No. 633-13	Raco Short Controller Rod complete with Controller Socket No. 333-37 and Point Socket No. 633-4 (without point lug or ball stud).


SWITCH CIRCUIT CONTROLLER ARM
92¼"

No. 633-15	Raco Long Controller Rod complete with Controller Socket No. 333-37 and Point Socket No. 633-5 (without point lug or ball stud).

Orders for special length rod should state center to center dimension, as shown above for standard lengths.

RACO SELF-ADJUSTING SWITCH CIRCUIT CONTROLLER RODS

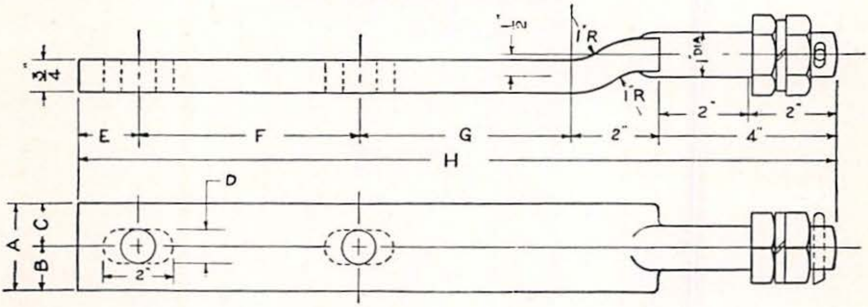
The complete rods shown on the preceding page **except with the point socket threaded, as heretofore,** to receive a threaded rod, may be ordered as follows:

Ordering References

(Rod complete but without Point Lug or Ball Stud)

No. 333-82	Raco Short Controller Rod complete with Controller Socket No. 333-7 and Point Socket No. 333-87.
No. 333-88	Raco Long Controller Rod complete with Controller Socket No. 333-7 and Point Socket No. 333-87.
No. 333-90	Raco Short Controller Rod complete with Controller Socket No. 333-37 and Point Socket No. 333-87.
No. 333-92	Raco Long Controller Rod complete with Controller Socket No. 333-37 and Point Socket No. 333-87.

RACO POINT LUGS



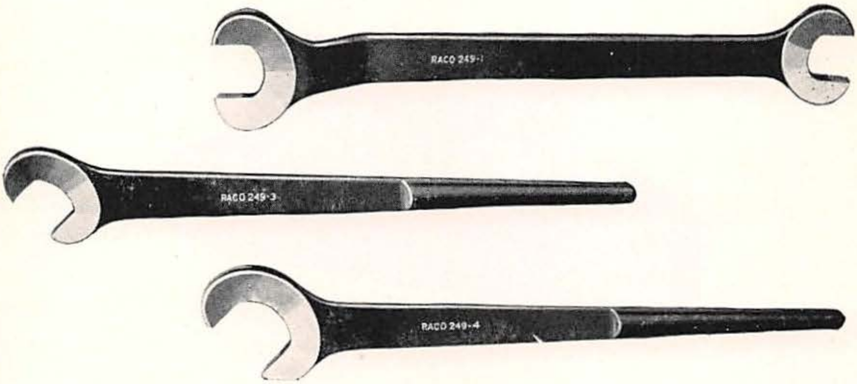
ORDERING REF.	A	B	C	D	E	F	G	H
333-54	2"	1"	1"	25/32"	1⅜"	5"	4¾"	17⅛"
333-55	2½"	1¼"	1¼"	1 1/32"	1⅜"	5"	2"	14⅜"
333-56	2½"	1¼"	1¼"	1 1/32"	1⅜"	5"	4¾"	17⅛"
333-65	2½"	1¼"	1¼"	1 1/32"	1¼"	5"	8⅛"	20⅜"
333-78	2½"	1¼"	1¼"	25/32"	1⅜"	5"	6"	18⅜"

Special length rods and lugs can be furnished if required. Submit plans of your requirements.

We can furnish these AAR standard ball studs when required:
AAR No. 12711 Insulated Ball Stud complete for controller arm, with or without grease fitting.

AAR No. 12712 Non-insulated Ball Stud complete for controller arm, with or without grease fitting.

RACO SWITCH ADJUSTING WRENCHES



Made of the highest grade forged steel, these wrenches will stand the most severe usage.

The jaws are wide enough, and are attached to the handle at the proper angle, to overcome the tendency to slip off the nut. They are also strong enough to stand a very heavy pull without opening or breaking.

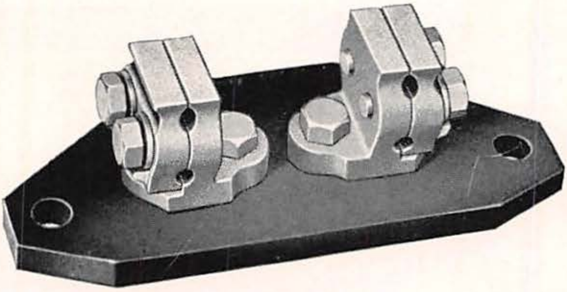
The handle can be used as a pin to hold a crank in its stand and keep it in service when pin is removed for examination, repair, or replacement.

The set of three wrenches will take care of practically all adjusting nuts and bolts on switch layouts.

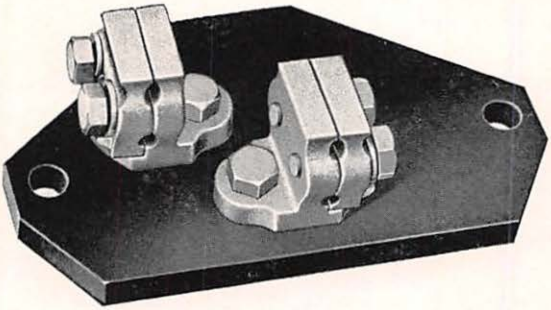
Ordering References

Number	Opening	For Bolts and Nuts	Length	Weight
249-1	1-5/16″ 1-11/16″	3/4″ 1″	19″	6 lbs.
249-3	1½″	7/8″	19″	4¼ lbs.
294-4	2-1/16″	1¼″	19½″	4½ lbs.

RACO SHUNT CONNECTIONS



No. 521-14



No. 521-12

An improved means for making shunt connections to switch circuit controllers.

Heavy track circuit connectors are connected outside the switch circuit controller by means of powerful bronze clamps, which are insulated from each other and from the box by a substantial cover plate of insulating material.

Heavy bronze binding posts extend through the cover plate for making connections inside the box with flexible wire.

By reversing the clamping plate, the clamp may be used to grip one track circuit connector instead of two.

RACO SHUNT CONNECTIONS

The Clamps on these connections are made for AAR stranded Connectors (¼″ or 5/16″ diameters). Specify if a smaller diameter is required.

Ordering References

For G.R.S. Switch Circuit Controllers, Models 7 and 8.

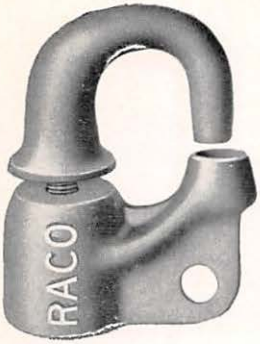
No.	
521-14	Raco Shunt Connection complete with two connector clamps. Consists of connection for one side of controller. Applicable to either side of controller.
521-17	Raco Shunt Connection complete with one connector clamp for right* side of controller.
521-18	Same as 521-17 but assembled for left* side of controller.

For U.S.&S. Switch Circuit Controllers,
Models U-3, U-4, U-5 and U-6.

521-11	Raco Shunt Connection complete with two connector clamps for right* side of controller.
521-12	Same as 521-11 but for left* side of controller.
521-19	Raco Single Shunt Connection complete with one connector clamp for right* side of controller.
521-20	Same as 521-19 but for left* side of controller.

*Note: Right and left hand are facing controller from track.

RACO PADLOCKS



Made of bronze, they will not come completely apart.

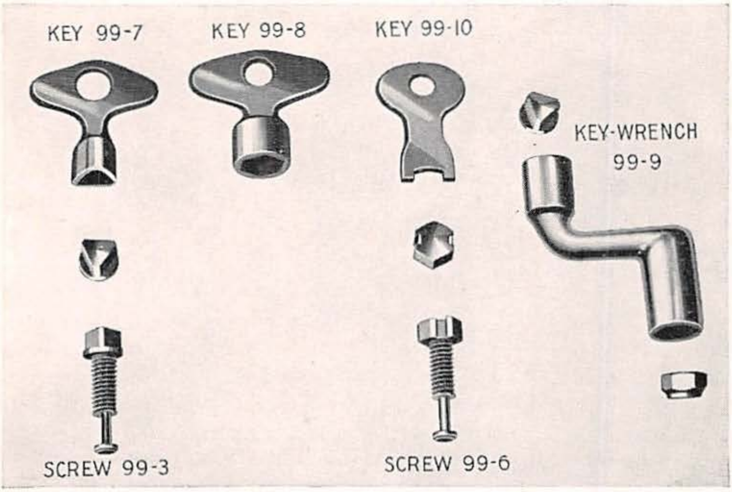
They are of simple design and sturdy construction and do not freeze up or get out of order.

While very inexpensive compared to tumbler locks, experience has shown that they are equally effective.

Furnished with two different types of screw heads and keys to fit, as illustrated.

Please order lock assemblies and keys by number.

Keys should be ordered separately.



No. 99-13 Padlock assembly complete with screw No. 99-3 (order Key No. 99-7 or Key Wrench No. 99-9 separately).

No. 99-16 Padlock assembly complete with screw No. 99-6. (order Key No. 99-8 or 99-10 or Key Wrench No. 99-9 separately).

Note: Screw No. 99-6 has standard AAR hex head and will take an AAR socket wrench (See Raco Wrench No. 528-50, page 102).

Approximate net weight: 60 lbs. per 100 locks.

RACO TRANSVERSE PIPE CARRIER

The support member is made of malleable iron adjustable horizontally and vertically.

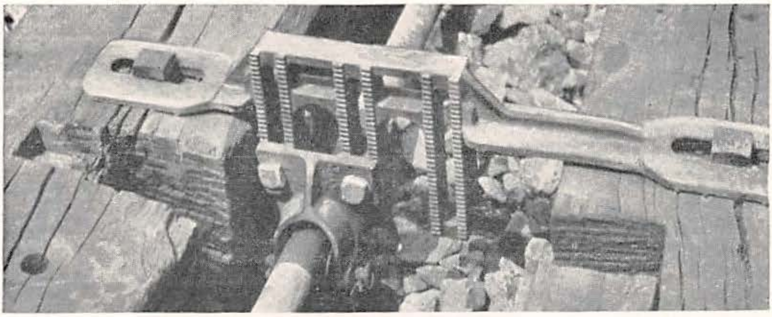
No tie-cutting—no shimming.

No need to respace ties to install.

The short pins and the rollers may be removed while the carrier is in place.

One roller may be adjusted slightly above the other as necessary.

Ribs prevent laterial shifting of the carrier on the tie.



Ordering References

No.	
411-1	One-way Raco Transverse Pipe Carrier complete.
411-2	Two-way Raco Transverse Pipe Carrier complete.
411-3	Malleable Iron Bridge Support only.
411-4	Cast Iron Hanger only.
411-5	Cast Iron Binding Washer only.
411-6	Cast Iron Sheave only.
411-7	C.R. steel pin with two cotter pins. ½″-13 x 3″ galvanized sq. head bolt with nut. ½″ galvanized lock washer. ½″ W.I. galvanized plain washer.
411-8	Complete set of additional parts required to convert 1-way to 2-way Raco Transverse Pipe Carrier.

¾″ diameter lag screws are used for fastening to ties. These are not furnished as part of the carrier.

Approximate net weight of 1-way carrier complete: 411-1—20 lbs., 2-way—411-2—30 lbs.

STYLE S LOOP TAGS

The tags are ⅝″ x 1½″, with loops 3½″ long, made of the highest grade twine, impregnated to minimize destruction by mice, and with knots shellacked. For convenience, they are put up in bundles of 100.

RACO TAG TWINE

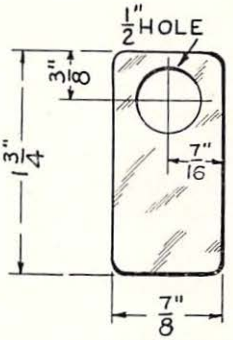
Raco No. 10 Tag Twine is the best obtainable for tags. It is thoroughly waxed and treated with bitter aloes. In 1 lb. spools.

RACO WHITE TAG FILLER

For filling stenciled letters and figures.

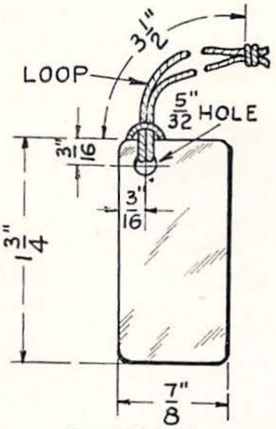
In standard packages of 12 sticks.

RACO FIBRE TAGS



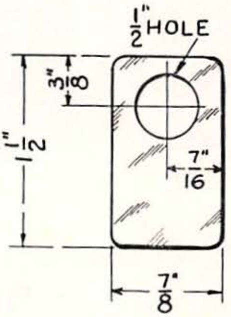
1/2" HOLE
3/8"
1 3/4"
7/16"
7/8"

NO. 359-1
COLOR BLACK ONLY



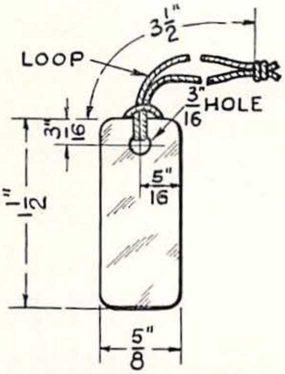
3 1/2"
LOOP
5/32" HOLE
3/16"
3/16"
1 3/4"
7/8"

NO. 359-2 WITHOUT LOOP
NO. 359-6 WITH LOOP
COLOR BLACK ONLY



1/2" HOLE
3/8"
1 1/2"
7/16"
7/8"

NO. 359-3
COLOR BLACK ONLY



3 1/2"
LOOP
3/16" HOLE
3/16"
5/16"
1 1/2"
5/8"

NO. 359-4 WITHOUT LOOP
NO. 359-5 WITH LOOP
COLOR BLACK OR GRAY

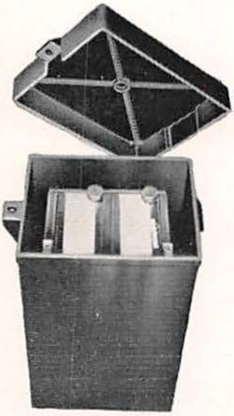
No. 359-7 Same as 359-1 except with 1/4" hole.

Tags are furnished without varnish unless otherwise specified.

If varnishing is required, specify if one or both sides are to be coated.

RACO BATTERY BOXES

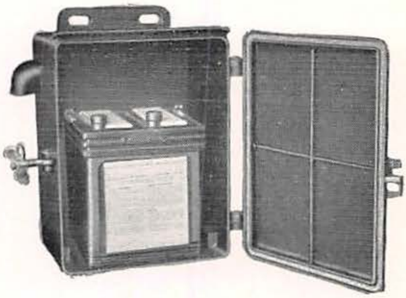
The Boxes illustrated have been especially designed to house the Edison 2SJ1 Battery and the National Carbon T-2600.



The No. 564, ground type, is primarily used in connection with electric lighting of switch lamps. The cover of this box provides the necessary ventilation.

The No. 568-1 Raco Pole Battery Box is for either Edison 2SJ1 Battery or National Carbon T-2600.

Specify if U-bolts are required, giving size.



Ordering References

No. 564-4 *Raco Battery Box with shelf for Edison 2SJ1 battery.

No. 564-5 *Raco Battery Box with shelf for National Carbon T-2600 battery.

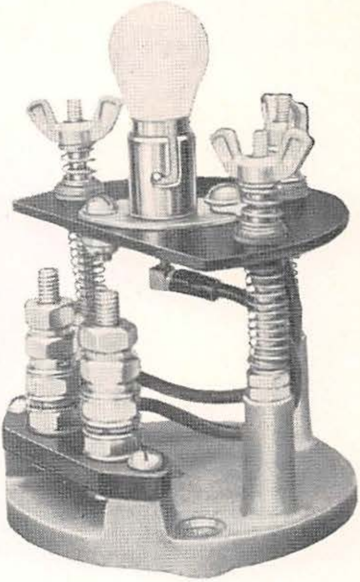
*These boxes are furnished with Compression Type Connector for cable. Specify size as follows:

No. 564-10 Compression Type Connector for cable ⅜″ to ½″.

No. 564-11 Compression Type Connector for cable ½″ to ⅝″.

Approximate net weight: No. 564—63 lbs., No. 568—63 lbs.

RACO ADJUSTABLE CUSHIONED LAMP ADAPTER



The Raco Adapter is designed for the AAR 1440 and 1460 lamps.

Vibration is snubbed by stainless steel springs. These springs permit the lamp film to be adjusted to the focal point and this adjustment is held by elastic stop wing nuts.

The bayonet socket contains a Raco silver contact and a stainless steel spring.

Ordering References

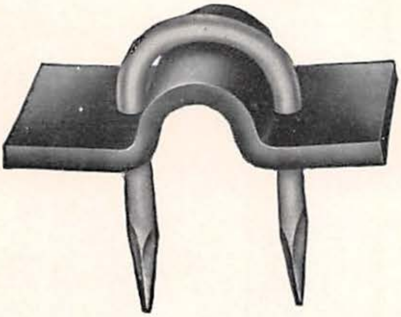
No. 564-12 *Raco Adjustable Cushioned Lamp Adapter for AAR 1460 lamp.

No. 564-13 *Raco Adjustable Cushioned Lamp Adapter for AAR 1440 lamp.

*A Compression Type Connector (either No. 564-10 or 564-11—see page 138) is furnished with each adapter.

RACO INSULATING STAPLE

A convenient and economical means for fastening shunt and fouling wires, up to 3/8″ diameter, to ties.



A Copperweld Steel staple, and a hard fibre insulation piece. The inner radius of the fibre piece is 3/8″.

Ordering Reference

No. 378-1 Raco Insulated Staple (carton of 100).

Net weight per carton of 100: 3½ pounds.